

Chapter 2

A Practice-Based Approach to Safety as an Emergent Competence

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Abstract This chapter proposes to look at safety as a collective knowledgeable doing, i.e. a competency embedded in working practices. Therefore, by adopting a practice-based approach to inquire into how work is actually accomplished, we can study how knowing safe and safer working practices is kept and maintained within situated ways of working and talking about safety. The knowledge object ‘safety’ is constructed—materially and discursively—by a plurality of professional communities, according to specific scientific disciplines, controlling specific leverages within an organization, and talking different discourses. In a workplace, there are competing discourses: technological, normative, educational, economic, and managerial. Therefore, learning safer working practices is mediated by comparison among the perspectives of the world embraced by the co-participants in the production of safety as an organizational practice. Training and learning based on situated working practices presumes the collective engagement of researchers and participants in reflexivity, which can help to bring to the surface the experience knowledge embedded in practicing and transform it into actionable knowledge to produce practice changes. In fact, the engagement of practitioners, their experience knowledge and their care for what they do may enhance workplace resilience.

Keywords Working situation • Communities of practices • Discourses

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2.1 Introduction

The invitation from FonCSI¹ to reflect on professionalization and safety beyond traditional approaches requires a preliminary explication on how the three terms are understood, before addressing my main reflection on their relationship.

The meaning of safety may be constructed in different ways according to the disciplinary background of the researcher and the approach he or she develops. Thus safety may be thought of and represented as a multifaceted phenomenon that enables a pluralistic way of inquiry. Moreover, the understanding of the field of safety should be considered in historical terms, since it is in itself a socio-cultural product of specific societies. For this reason, we have seen that from the study of risk (in objectivist terms), the field moved on to the culture of safety as an organizational dimension, to reliability and resilience as situated practices. In fact, we may say that the study of safety is part of a reflexive science, since the knowledge produced is going to change the object of study and the changed object calls for a renewed way of studying it.

For approaching safety through the lens of a cultural, organizational and practice-based definition, I offer the following formulation:

Safety is an emergent competence which is realized in practice, which is socially constructed, innovated and transmitted to new members of the community of practices, and which is embedded in values, norms and social institutions. It is the final outcome of a collective construction process, a ‘doing’ which involves people, technologies and textual and symbolic forms assembled within a system of social relations. In other words, a ‘safe’ workplace—a ‘safe’ organization—results from the constant engineering of diverse elements (for example, skills, materials, relations, communications) which are integral to the working practices of the members of an organization. Safety, then, is knowledge objectified and codified in an expertise and circulating within a web of practices. In order to exist it must be performed in, by and through safety practices, i.e. through discursive and material social accomplishments (Gherardi 2006: 71).

When we look at safety through the practice lens we see that:

1. safety is emergent from the working practices of a community;
2. it is a collective knowledgeable doing;
3. it is embedded in the practices that perform it.

This ‘lens’ has implications for research since it requires researchers to study safety by studying situated working practices and how practitioners achieve or fail to achieve safe working practices. In other words, safety has to be understood and explained in context and not treated as decontextualized knowledge that may be transferred from one site to another. At the same time this kind of ethnographic, fine-grained understanding of how safety is achieved in situated working practices constitutes a challenge to theorizing safety across different settings. It is important

¹The two-day international workshop mentioned in the preface, organized by FonCSI in November 2015 and highlight of the project that led to this book (editors’ note).

to stress that in implementing safety projects we need a local, contextual and detailed knowledge of how a community of practitioners perform more or less safe working practices, since the focus on safety, as actually done while working, raises the importance of situational improvisation, experience and tacit knowledge as sources of resilience (Johansen et al. 2016).

In proposing a practice lens for looking at safety, we are enlarging the traditional way of looking at safety mainly in relation to prevention and control of processes (or products) related to risk in hazardous activities. When we consider safety as ‘knowing-in-practice’, we are looking at a kind of knowledge that is pervasive and referring to reliability rather than being limited to risk-related contexts. Any activity should in principle be reliable in its outputs and social effects, especially if we consider that risks are pervasive and prone to happen as a consequence of the growing interdependencies of our ‘risk society’ (Beck 1992).

FonCSI proposes a large definition of the term ‘professionalization’ to encompass all kinds of learning and training situations, not limited to traditional classroom training or specific safety-related training. We consider that one of the reasons for this call for papers is dissatisfaction with the delivery of traditional safety knowledge and therefore an implicit issue that needs to be addressed is how this may be imagined and delivered differently. Consequently, I propose to look at professionalization distinguishing three lines of inquiry:

- *Strictu sensu* professionalization has to do with the institutionalization of a relatively new professional figure—the safety manager—. Therefore, the institutionalization of a new ‘body of knowledge’ in the form of a profession raises questions about the learning curriculum of the aspiring safety professional, the institutions best suited to provide and certify this knowledge, the modalities for inducting the new professional into the organizational culture of the employer and moreover about the role and the activities that a safety manager is supposed to perform within a well-defined context.
- Another understanding of professionalization may refer to a distributed professionalization in which each community of practitioners has mastery of the safety knowledge relative to their own working practices and in relationships with other working practices. When I think in terms of distributed professionalization, we have to examine the issue of how to design training for it in a situated and ‘customized’ way of engaging the practitioners in continually developing new knowledge.
- Finally, if we consider professionalization as an umbrella term or if we wish to contemplate the actual pedagogy and the de-contextualized safety contents that can be transmitted in a routine way, we have to study safety education plans and their productivity.

Due to space constraints, I shall focus only on the second understanding, at the level of the workplace, leaving aside the other interconnections.

A final consideration for clarifying the positioning of my contribution is what kind of safety training is envisaged when the discourse on dissatisfaction with

‘traditional’ training is commonly addressed. The training that falls under this category may be considered to be inspired by a bureaucratic logic, aiming to answer to norms of accountability rather than efficacy. Moreover, often training is organized and delivered in an ‘ad hoc context’, usually in a class and with class modalities and often in multiprofessional contexts to unrelated professional groups. Finally, when we look at the implicit pedagogy of similar training we find that the contents of what is depicted as safety are formed by regulations and laws in the implicit understanding that knowing the regulations will produce different (safer) behaviours.

2.2 Safety as a Collective Knowledgeable Doing

Workplace safety is a particular form of ‘organizational competence’. In other words, it is a form of emerging competence sustained in working practices by interactions among various collective actors (Gherardi and Nicolini 2000),² and various discourses on what constitutes safety.

What we call ‘safety’ is the result of a set of working practices shaped by a system of symbols and meanings which orient action but which consist of something more. Safety can therefore be viewed as an emerging property of a sociotechnical system, the final result of a collective process of construction, a ‘doing’ which involves people, technologies and textual and symbolic forms assembled within a system of material relations. This system of relations is made up of heterogeneous components, and it does not display the traditional distinctions between human and non-human elements, cultural or natural aspects, action and constraints. Rather, all these elements are involved in a constant process of generation called the “engineering of heterogeneity” (Law 1992). A ‘safe’ workplace or a ‘safe’ organization are the outcome of the quotidian engineering of heterogeneous elements—competences, materials, relations, communications, people—integral to the work practices.

When we consider safety as a social and collective accomplishment, as something that is done with the collaboration of all the practitioners involved in a working practice, then we can say that it has the following characteristics:

- *It is situated in the system of ongoing practices.* It means that ‘safety’ cannot be separated from its practice and therefore we have to consider safe and safer working practices instead of studying, researching and intervening on safety in abstraction from its work context.
- *It is relational and mediated by artifacts.* Safety knowledge always manifests itself in social activities sustained by symbols, technologies and relations; i.e. action is always ‘mediated’. The essential instrument of mediation is language,

²This section is based on the theoretical framework developed in Gherardi and Nicolini (2000) and readers are invited to consult it for an in-depth analysis.

and the discursive practices in which action and interactions are made accountable to oneself and to the others. Everyday safety is based on the use of discursive and material artifacts which embody not only practical knowledge and experience but also the history and social relations implicit in the mediating artifact. It follows that safety is performed in, by and through social relations, which are relatively stable and have the capacity to deploy a variety of heterogeneous materials in support of working practices.

- *It is always rooted in a context of interaction, and it is acquired through some form of participation in a community of practice.* The idea that safety knowledge is inextricably bound up with action suggests that we should discard the prejudice that practical knowledge is an inferior form of knowledge. Safety knowledge is competence-to-act, and as such it is primarily tacit and taken for granted, as well as being deeply rooted in individual and collective identity. It is tied to particular circumstances, like for example the need to repair breakdowns in the meaning system on which action is based, or the effort to transfer such competence outside its context of origin. Therefore, safety learning does not consist of the appropriation or acquisition of pieces of knowledge, instead it is viewed as the development of situated identities based on participation, within a community of practice (Lave and Wenger 1991; Wenger 1998). A key element for interpreting safety knowledge in organizations thus is the process whereby novices become part of professional ‘worlds’, become competent in mastering the jargon and the micro-decisions in the system of social practices which regulate participation in situated working practices.
- *It is continually re-produced and negotiated, and hence it is always dynamic and provisional.* The overall picture, therefore, is one in which safety knowledge is no longer conceived as a stable entity that can be situated in individuals or groups, in technologies or rules; it is instead processual knowledge (knowing) emerging from actions and in constant evolution. Safety knowledge is a provisional and performed set of associations among heterogeneous materials; it is therefore the outcome of a ‘doing’ which uses as its resources for action such diverse materials as people, technologies, textual and symbolic forms assembled within a social context characterized by the presence of multiple collective and individual actors occupying specific power relations. Safety knowledge is sociomaterial and it is the local product of a craft, based on knowledge resources ‘disembedded’ from their original context and made available through their transformation, legitimization, institutionalization and circulation. However, these resources are then re-embedded in other contexts, in a process which constantly alters both knowledge and the local context of action.

In summing up, we may say that the engineering of heterogeneous elements involves an effort to integrate modes of action proper to several working practices in the organization and sustained by members who, in that they are engaged in different practices and in different communities of practice, deal with safety in different ways. ‘Safety knowledge’ therefore takes the form of a ‘cultural’ competence able to influence the style and manner in which meaning and value are attributed to events

and to determine the use to which the resources, technologies, artifacts, and knowledge of a group or organization are put. We can say therefore that the knowledge object ‘safety’ is constructed—materially and discursively—by a plurality of professional communities, according to specific scientific disciplines, controlling specific leverages within an organization, and talking different safety discourses.

When we examine the many safety discourses, co-habiting the very same organization and none of which are hegemonic or possessing a superior ‘truth’, we can understand better how workplace safety becomes a contested terrain, which is more often like a ‘dialogue of the deaf’ than an integration of perspectives. The plurality and contemporaneity of safety discourses has consequences for the learning of safety in a constellation of communities of practice. Learning safer working practices is mediated by comparison of the world perspectives embraced by the co-participants in the production of safety as an organizational practice. We shall develop this argument in the following section, since the comparison among perspectives is made possible by the alignment of mental and material elements, within mutually accountable discursive positions (Gherardi and Nicolini 2002). These alignments are provisional and unstable; they produce tensions, discontinuities and incoherence (cacophony) just as much as they produce order and negotiated meanings (consonance).

2.3 The Quotidian Engineering of Heterogeneous Elements, Embedded in a Plurality of Safety Discourses

The term ‘discourse’ is used to denote a set of texts able to give a (relative) stable form to an object or set of objects, together with the structures and practices involved in their production and circulation. Discourses are forms of strategic arranging that are intentional but do not necessarily have a subject (Law 1994: 21; Foucault 1980: 95). Discourses are therefore themselves relational effects and, as such, they are necessarily contingent, no matter how durable and established they may appear. To every discourse there corresponds an entrenched action-net of alliances which facilitate translation and mobilization of knowledge and modes of knowing. In the case of safety, there are competing discourses: technological, normative, educational, economic, and managerial. The first three will be illustrated in the next sub-sections, while the latter two considered to be implicit in the logic of the chapter.

2.3.1 Safety Within the Technological Discourse

The ‘technological’ discourse of safety is matched by a network of institutional actors which comprises, amongst others, engineers, physicists, planners, legislators, producers and distributors of organizational learning practices and products.

Though formally independent, these actors operate in close contact with each other, because they have well-established channels of communication and because they sustain common and complementary practices of organizational learning which are not limited by formal organizational boundaries. Acting as a whole, they sustain the technological discourse of safety that is well expressed by the designer of safety devices who explains that it is possible to “build safety into the equipment, the work and the machinery”. This safety discourse reveals a specific understanding of the issue and a specific manner of interpreting and explaining events and actions, and working to encourage or prevent them. Think for example of how the capacity of an artifact (or a technology) to exert its control at a distance, depends on the well-established alliance between the discourse of safety—the use of ‘safe’ artifacts—and the bureaucratic and repressive discourse of safety.

2.3.2 *Safety Within the Normative Discourse*

The normative discourse is asserted mainly by governmental or para-governmental control and prevention agencies and by the judiciary. Though formally independent, these agencies operate in close contact with each other: together they constitute a crucial node in the circulation of safety knowledge in any industry. They derive some of their importance from the fact that they occupy a central position in the perpetuation of the dominant bureaucratic discourse on safety. The conception of safety asserted by the control agencies is based on the idea that safety results from the correct application of rules and from obedience to regulations.

For these agencies, the promotion of safety hinges on control and on information about the rules. The alliance between the technological and the normative discourses on safety is made manifest in the support that the control and prevention agencies provide for the artifact, in order to reinforce its capacity to exert control at a distance and to alter ongoing practices, and thereby generate ‘safety’. The interpretative flexibility of technology thus becomes an arena of conflict in which the premises of action imposed by the artifact and the action net that sustains it are rejected.

A typical first refusal strategy is an attempt—often successful—to adapt the artifact to routine practices, thereby thwarting (and traducing) the intentions of its designers. To forestall such manoeuvres of translation by users, the technology, and with it the entire action net that has brought it into existence, must ally itself with the control and prevention agencies in order to discourage ‘interpretation’ by alteration. Through the work of inspectors and controllers, the technology ‘mobilizes’ all the coercive power imparted by the institution of control and prevention, as well as that of the judicial system, to discourage the ‘decomposition’ of the device and its material reinterpretation in everyday practices. The alliance is institutionalized in ‘industrial standards’ of shape and use, giving rise to specific intermediaries in the form of statutory rules, inspections, testing processes and certificates that show that an item meets legal standards.

Another way in which the vigilance and prevention agencies back up an artifact's ability to exert control at a distance consists in their efforts to neutralize a further, very elementary but extremely effective, strategy of resistance: simply ignoring the artifact or the intermediary (for example, by not carrying out one of the tests prescribed). This disregard may be deliberate—claiming economic reasons for not purchasing new technologies which 'meet the legal standard'—or non-deliberate and due to simple ignorance. In both cases the shared goal of 'technology safety experts' and the control agencies is to enforce the use of items which in turn produce a 'control' effect.

The deliberate ignoring strategy is usually dealt with by inspections and controls. Such an enforcement strategy however prefigures new alliances and new manoeuvres in the process of engineering heterogeneous elements and communities of practice.

The representatives of the users of the machinery may come together and employ lobbyists who argue that adopting the technology is economically damaging to companies, so that the law must be watered down or postponed. Enforcement therefore is often backed up with other motivation discourses such as that of 'progress' or 'workforce well-being'. The manoeuvre constitutes an effort to enrol other actors in the dispute, who will use the issue for their own purpose: the workers' unions to reaffirm their role as defenders of the rights of workers, and entrepreneurs to gain legitimacy as 'modern and progressive'.

In this scenario, other actors also come into play, who have been 'mobilized' to enforce the use of safe equipment. For example, the firms manufacturing the technology are pressed into service. It is obviously in their interest to argue that safety levels should be improved, since this provides them with opportunities to sell a new generation of products, thereby increasing profits. Their commercial representatives thus become the brokers of the normative discourse, which they assert in order to generate sales. Simultaneously, however, they also act unknowingly as the intermediaries of the knowledge and culture embodied in the artifact.

2.3.3 Safety Within the Educational Discourse

The institutionalizing effect of the control agencies and their system of mobilizations and alliances frequently leads to the involvement of agencies that sustain the discourse of safety as education and training. Information about the importance of the correct use of the artifact is conveyed by training and retraining courses and is included in manuals and information material.

Inclusion of the innovation in manuals signals the success of previous efforts, but it also exerts powerful influence on its own account. It affects, in fact, a further important actor, namely the novices who, preconditioned during their training, perform micro-translation processes in the workplace. If novices are asked to use sub-standard equipment, they may refuse, enlisting the use of innovation in their effort to construct a work identity which differentiates them from the 'old workers'.

To highlight their difference, they may therefore flaunt the use of innovation, and in doing so, unwittingly act as a further link in a chain of alliances and mobilizations.

2.3.4 Safety as the Effect of Competing Discourses

Therefore, safety can be conceived as the effect of an action net, in which competing discourses coexist: the technological discourse with other discourses, such as that of safety as rules and punishment, of safety as education and training, of safety as profit or loss, and of safety as management and planning. Discourses among specific practices are not directly aimed at reaching understanding and/or the production of collective action, but rather at knowledge mediated by comparison among the perspectives of all the co-participants in a practice. Comparing different perspectives does not necessarily involve the merging of diversity into some sort of synthesis—harmonizing individual voices and instruments into a symphony (or a canon)—but rather the contemplation of harmonies and dissonances may coexist within the same performance.

2.4 Implications for Experimenting in Training

The principles on which to base a pedagogy for training that acknowledges the situatedness of safety knowledge are simple and are consequential to the practice-based approach outlined. In the first instance the object of training and learning has been moved to safe working practices and the recipients of such training become the community of practice that collectively reflect on their working practices and the knowledge embedded in them in order to change or improve their reliability. An implication of such a principle is that training cannot be delivered in a separate time and place, but should consider the workplace as a learning place and address the community of practice dwelling in it. In my experience, the representation of working practices (through video, feed-back restitution etc.) to practitioners may be a useful means to reflect on and change practices.

In the second instance the multimodality around safe working practices has to be acknowledged in order to improve the interpretative flexibility and mutual accountability in practicing and dealing with practical responsibility. One way of understanding the different discourses on safety may be translated as the capacity of participating with competence in a conversation that is characterized by tensions and sometime difficult trade-offs. In other words, the knowledge object ‘safety’ should be learnt during training as an object of concern and not an object of fact. The difference between a matter of fact and a matter of concern (Latour 2004) is that instead of ‘being there’, whether one likes it or not, matters of concern have to be liked, appreciated, tasted, put to the test. Matters of concern are disputable, they move, they carry one away, they *matter*. Too often safety is approached in a rational

way, and persons are conceived as a non-trustable ‘human factor’. On the contrary the simple evidence that persons are concerned by safety and that safety concern persons and society could become the basis for action-learning programs (Eikeland 2012; Eikeland and Nicolini 2011) inspired by care in working practices. Since care cannot be prescribed, nor encoded in some sort of evidence-based manual, the possibility of recognizing what is commonly understood to be care in a work setting, and how an implicit understanding and negotiation of care takes place on a daily basis, may become a starting point for the development of a situated repertoire of caring practices in a workplace. In fact, the idea of what is care (and how people are engaged in ‘doing’ safety) is silently incorporated in working practices. Therefore, for the development of a situated training program in the workplace it should become an explicit topic for discussion and for collective learning. Safety does not speak for itself, often it is ‘done’ but not ‘seen’.

Practice-based studies have experimented with several methodologies—ethnography, reflexivity, narrativity—for enhancing the formative and transformative role of knowledge embedded in working practices (Boud et al. 2006; Fenwick 2003; Hager et al. 2012; Raelin 2001; Scaratti et al. 2009). The necessary condition for this is the collaboration with practitioners working within the organization and “the challenge is thus to devise new ways of making (and considering) people as the authors of their work. The expectation is that this will enable people to shoulder and contribute to the goals of the organizations they belong to” (Gorli et al. 2015). In fact, the collective engagement of researchers and participants in reflexivity (Cunliffe 2003) can help to bring to the surface the knowledge embedded in practicing and transform it into actionable knowledge (Argyris and Schon 1978). Actionable knowledge—for changing practices—emerges when all actors agree to question the issues that are often taken for granted and are ready to address the contradictions and conflicts that might emerge in the process.

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