

# Chapter 5

## Practices in the Danger Culture of Late Industrial Society

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**Abstract** The chapter replaces the question of risk control by one about how we handle danger in our societies and realize a measure of safety. Ongoing practices in a framework of ‘danger cultures’ are the key. The case of environmental and health inspection and the intersecting ‘social worlds’ involved, are used as a case to indicate important features.

**Keywords** Danger culture · Practices · Repertoires · Regulation · Good firms

### 5.1 Introduction

The world is full of dangers, actual and potential. People and societies can be fatalistic about them, but also attempt to reduce the dangers, for example by building dikes (and maintaining them) as a defense against floods—an example that comes easily for somebody from the Netherlands. Closer to home is how one’s house is supposed to keep one safe from the dangers outside.<sup>1</sup>

Professional specialities have evolved, up to safety engineering. In modernity, and particularly with the rise of the regulatory state since the late 19th century, an overall idea of protection against dangers has evolved, up to ambitions of controlling risks.<sup>2</sup> This can be traced in some detail, including the rise of probabilistic risk analysis [16].

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<sup>1</sup>Above the entrance to a big house near the Vliet in the Netherlands is the inscription “In de wereld is veel gevaar” (There’s lots of danger in the world), indicating that you will leave the dangers behind when you enter the house. The house (like the cave in prehistoric times) protects you against the dangers, the wild animals roaming outside.

<sup>2</sup>Cf. [6], who tells the story of attempts to develop probability, based on data from the past. He comments, in his concluding chapter: “The past seldom obliges by revealing to us when wildness will break out in the future”. (p. 334). Continuing the observation in the preceding footnote, one could say that the future is full of wild animals, and that risk control is an attempt to tame the future.

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The present book addresses the illusion of risk control, at least in so far as the attempt at control is aimed at reducing uncertainty. But the issues are just as much about safety and about danger, and protection from danger—up to illusions of protection. This move has been visible in the literature on safety and safety culture (for example [4, 11]) and has led to critical reflection [7].

It is important to broaden the picture in this way, not just because risk is a quite specific concept (cf. [16]), but also because there are problems with the notion of control. The illusion of risk control is the illusion of a priori risk control, as if there were no further developments and contingencies, and uncertainties could be made manageable (so that we could feel safe). As I will argue, risk/danger control is possible, but not a priori and independently of local contexts. But the illusion of risk control cannot be given up, because governments and managers have to prepare for eventualities, and do so by setting rules and regulations in the hope that these will have some effect.

Coming into these questions from the other side, as it were, from the side of danger and safety, one can consider actual practices to reduce danger and ensure some safety in an uncertain world, not always visible to the outside, but important to recognize for what is happening in them. One can be concerned by the risks of late industrial societies (cf. also [5] on the risk society), as well as in less developed countries, and rightly so. But with the uncertainties and increasing complexity of our societies, and the human propensity to focus on own immediate interests and not take up wider responsibilities, it is actually remarkable that there are not more accidents and damages of industrial and transport activities. There must be ‘repair work’ going on, as in the ‘near accidents’ (as with trains and planes, but also in road traffic).

Inspired by some work in Science and Technology Studies, I develop a perspective on ongoing practices of local reduction of unsafety and danger, which are all part of the ‘danger culture’ of our industrial society—which includes regulation [17]. This perspective fits perfectly in the critical reflection on proceduralization of safety [7], but adds a further element, the intersection of organisations and “social worlds” and the role of professionals [18].

## 5.2 The Danger Culture of Industrial Society

The notion of ‘danger culture’ was introduced by [20] to characterize the world of miners and mountaineers (and one could add, divers and other hazardous occupations and pastimes), where technical precautions and rules (including rules of solidarity) evolve and are enforced by the actors themselves.<sup>3</sup> In doing so, the members of these

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<sup>3</sup>It is useful to quote Turner at some length, to indicate his notion of danger culture as applying to a subculture rather than a whole society, which is my point: “Both the isolation and the danger which characterize such occupations promote cohesion and self-sufficiency, a sharing of danger and a suspicion of outsiders who do not share it. And all of these characteristics contribute towards the development of an occupational subculture of danger [...] which is similar in some ways to

worlds can push into the background the essential uncertainty with which they live. Thus, there is a dual survival strategy: reducing unsafety and dangers in daily life, in order to be able to continue to live in a world that is essentially dangerous.

At the macro-level of our industrial society, one sees a version of such a dual survival strategy. There are regulations of various kinds, based on expert advice (and now also including a precautionary component). The general trust in the effectiveness of regulations allows people to background the overall uncertainties of living in our late-industrial society. There might be a tinge of fatalism in this trust, linked to the delegation of responsibility to authorities and official regulations, which can turn into cynicism.

Ulrich Beck's diagnosis of the 'risk society' overlaps with my diagnosis of the danger culture of late-industrial society, but emphasizes the big risks and the organized irresponsibility that appears to be our way of handling them. He focuses on high-tech risks (nuclear, chemicals). But many actual dangers and their deadly effects derive from neglect, in the small and in the large.<sup>4</sup> Modest practices of vigilance, care, and what is called 'repair work' in sociology,<sup>5</sup> will be more important to maintain safety than regulations (which can never capture the local specificities and contingencies that determine actual outcomes).

I tend to argue against too much trust in regulation, and instead, put local practices up front when considering safety. But however important the focus on the local is, it cannot be sufficient, because some risks derive from the extra-local and from the 'not yet' [1].

Danger culture takes different forms and plays out differently at different levels. The subtitle of the original workshop theme paper asked: what does it take to live with uncertainty? I discuss what it takes to live with danger, from the known but uncertain dangers to the unknown unknowns. I will do so by briefly elaborating on the danger culture of industrial society, then present my perspective on "intersecting social worlds" [18] which is one essential element in how we live with danger.

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the disaster subculture developed amongst those whose homes are frequently exposed to natural hazards [...]. The subculture provides shared perspectives which enhance the group's control over their work situation, which maximise autonomy and minimise dependence upon outsiders. Fear is often, though not always, denied within the group as a way of making the internal environment more predictable, and group norms are very important both in controlling and testing new members and in (Footnote 3 continued)

encouraging them to behave predictably in the face of danger. [...] Safety may be taken seriously at one level by regarding all possible hazards as extremely dangerous (though this may not include all conditions seen as hazardous by outsiders), but these occupational groups differentiate in practice between different kinds of hazard. Miners, for example, give most instruction to newcomers about everyday dangers such as falls and slips, less about dangers of an intermediary kind such as misfired explosions, and in the face of the possibility of major hazards such as fires and large cave-ins they are more stoic and fatalistic." [20, p. 67].

<sup>4</sup>The April 2013 collapse of the Rana Plaza garment factory complex in Bangladesh, causing the death of more than a thousand workers, is a dramatic example.

<sup>5</sup>Grote [10] makes the same point when arguing that the socio-technical model of safety culture emphasizes the importance of "supporting local actors in controlling variances at their sources" (p. 645).

Even while cultural rules and repertoires tend to be reproduced, practices in particular danger cultures (and more generally) evolve. This is visible at the meso-level, in the communities of miners and mountaineers. Explicit rules may emerge, covering a variety of situations, and these may be formalized and become part of the official rules of the organization and/or the sector. But then, at the micro-level, in specific settings, there are ways of doing that keep the practice a going concern even when this goes against the rules. The latter may avoid danger in concrete cases (cf. ‘repair work’), but also undermine safety in the longer term (cf. the example of [21] of alarms in nuclear plants that are too sensitive, so people learn to ignore the alarm signals and/or dismantle the devices – until such time as there is real cause for alarm but it is not noticed or followed-up).

At the macro-level, danger culture includes prescriptions and requirements (for safe processes and products), the regulation of chemicals, safety rules in traffic. Thus, a network of rules (like taboos) that allows us to continue with what is essentially dangerous business: living in industrial society [8].

Safety, in the sense of “avoidability of unacceptable risk” (to paraphrase the original workshop theme paper), refers to practices and to responses to events as they occur as much as to anticipatory knowledge feeding into regulation. I will use a concrete case to discuss this further: the explosion of a fireworks factory in the city of Enschede on May 13, 2000, devastating the immediate surroundings and killing 18 people.<sup>6</sup> It is not completely clear what the sequence of events and the causalities were, and where blame might be located. The case does allow identification of three components of safety in practice.

There are technical aspects, in this case that the concrete covers of the bunkers in which the fireworks were stored were too heavy, so that more pressure built up inside the bunkers, and the eventual explosion created more damage (through the shock wave, and through blocks of concrete flying through the air) than necessary. Afterwards, military specialists in storage of explosives pointed this out, referring to their own rules. This is just one technical aspect. In general, there are issues of reliability, strength of constructions, measuring health and environmental effects of chemicals.

Then, there are contingencies on location, in particular the absence of ‘repair work’ when there was a small fire in the yard of the factory (intentionally or unintentionally), and the few people around on that Saturday morning/early afternoon let it continue. This has led to attempts to find fault, and blame people. Conversely, the unavoidable “uncertainty about sequences of events” should be an occasion to push for watchfulness and repair work of the actors, which should be part of the culture (as it is with miners and mountaineers).

Thirdly, there had been a certain laxness of the city’s inspectors in applying official rules to what the factory was doing, situated in the midst of a built-up area. After the fact of the explosion, this was criticized, but it is part of a general aspect of control of risks. To assure safety, it is not enough to focus on compliance to stipulated regulation,

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<sup>6</sup>This event has been referred to in the literature [12, p. 271]. I add my own involvement in that I lived uncomfortably close by, but experienced only extensive material damage to my house.

and rules more generally, and it may be counterproductive in terms of actual safety. The actual behaviour of firms is the important thing, and actual interactions between safety inspectors and firms have focused on this. If the firms tend to be “good” firms, then, if they happen to not follow a rule, or an accident occurs, this need not be sanctioned because they generally try to do a good job. Clearly, this creates a “grey zone” of interactions and negotiations, and things may go wrong.

It is this last point that I want to develop further, using workplace and environmental safety as the concrete domain. While my discussion builds on some of the specificities of that domain, like the difficulty of monitoring and the problems of sanctions, the point about intersecting social worlds and the role of C- and R-repertoires (see below) is quite general and applies to all sorts of professionals and proto-professionals. In other words (and in line with some recent literature like [10] and [7]), important aspects of risk and safety are about general social and behavioural dynamics, rather than specifically about risk and safety. The recent interest in ‘safety culture’, however important in its own right, is still limited because of its strong links to management questions of how to create and maintain it [14], in a further step leading to blaming organizations for not paying sufficient attention to their safety culture, rather than inquiring into actual safety. In my discussion below, I draw attention to interactions across organizations (that is why I refer to ‘social worlds’) their nature and quality in terms of assuring some safety. ‘Danger culture’ is an even broader concept. In this chapter I limit myself to how it plays out in the worlds of professionals.

### 5.3 Negotiations in Intersecting Social Worlds, Rather than Implementation of Regulation<sup>7</sup>

Let me start with a puzzle. Many industrial firms comply with environmental regulations. However, it is not obvious that they will do so. If the profit motive is what drives them (and managers and CEOs tend to refer to the need to make a profit, if only to close difficult discussions about what the firm should do), why would they ever comply to environmental regulations, e.g. about handling wastes? Violations (infringements) of the rules are unlikely to be discovered (in the 1980s, only 25 % of environmental violations were detected, and when found out, the sanctions are light and/or can be postponed and reduced by protests and court cases. A simple cost-benefit calculation would drive firms to not, or only minimally, comply with regulations. Indeed, there are so-called ‘cowboy firms’ which do not comply at all, and enjoy the benefits as long as they can. If they are caught, and face strong action, they might just end their business (and continue their operations elsewhere, under

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<sup>7</sup>This section draws heavily on an unpublished paper, which is now in the public domain as part of a collection of papers by Arie Rip on the occasion of a conference in honour of his being retired Rip2011. The text and figures draw on this paper, with only minor modifications.

another name). But the majority are ‘good firms’, who want to avoid scandals, and pride themselves on maintaining good relations with environmental inspectors.<sup>8</sup>

What happens is that the good firms, or at least parts of them, are part of a new social world, together with the environmental inspectors out on duty in the field. It is an enforcement and compliance world, and a key component is how a productive C-repertoire has emerged, with linkages to the R-repertoires of the firms (profit motive) and the inspectorate (enforcement of regulation).<sup>9</sup> Here, I am using concepts inspired by science and technology studies on the difference between the discourse within the protected spaces of science, and the discourse in presenting and justifying the work of science to the outside world [9, 18]. In the contingent (C) repertoire, informal interactions and negotiations can be conducted in local practices, and are accepted. The rational (R) repertoire has formal rules and justifications, for outside use, but can also be referred to within the C repertoire as a sort of boundary condition. Professional practices of lawyers, scientists and medical professionals can be analysed in those terms.<sup>10</sup>

The C-repertoire allows inspectors to forget about enforcing the formal rules and focus on avoiding environmental pollution in practice, in exchange for “good” behaviour of the firms they interact with. “Better a dirty conscience than a dirty world” is their motto.<sup>11</sup> That it is a social world is clear from the occurrence of inclusion and exclusion moves. Firms which go against the informal rules of good behaviour are labeled as deviants (“cowboy firms”), and are treated harshly. “Good firms” on the other hand can have their occasional waste problem, but it is then treated as an unfortunate accident. At the side of the inspectorate, there are also inclusion/exclusion pressures. They have to avoid strict adherence to the rules, or will be seen as fanatics (also by their colleagues) and disavowed.<sup>12</sup>

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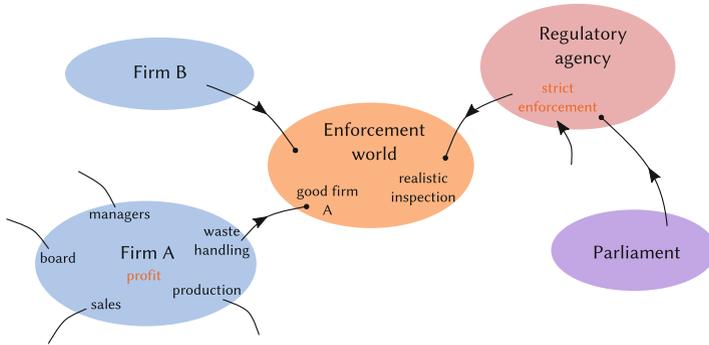
<sup>8</sup>The distinction between ‘good firms’ and ‘cowboy firms’ returns again and again, and is not limited to firms. NRC Handelsblad, 29 April 2006, presented commercial stem cell therapy (“trade in hope”) under the heading: ‘Stem cell cowboys conquer the world, now also in Rotterdam’. On the front page, it referred to “dubious treatments”, and used as heading: “Specialists call for a stop of ‘stem cell pirates’”. The “good” therapists were trying to exclude the “cowboys”.

<sup>9</sup>Here, and subsequently, I focus on interactions between firms and inspectors, but the same type of analysis is applicable within an organisation. See for example the empirically rich report on incident reporting in a nuclear research centre [19].

<sup>10</sup>See for example [2] on the world of court rooms.

<sup>11</sup>It was their motto, at the time. Changes in governance (partly inspired by new public management) have forced inspectors to become more distantiated, with fewer interactions in the field. A striking example is the Dutch Occupational Health and Safety Inspectorate, which is now limited to advise on health and safety activities in general, rather than interact with firms.

<sup>12</sup>Here and in the following, I use data and quotes drawn from a Special Issue of Policy Studies Journal (1982) to illustrate these points, drawing on a draft paper for a summer workshop at IIASA, July 1983. There is a contingent repertoire (C) which talks of bargaining, of being pragmatic, “the ‘twilight zone’ process of seeking voluntary compliance and negotiating stipulations” (59) [Numbers between parentheses refer to pages of Policy Studies Journal.] There is also a rational repertoire (R) where enforcement is seen as the execution of the rules, “command” instead of “bargaining” (139), the “strict liability” that does not take into account the intentions of the actors (160) or the possibility of “accidents” that decrease culpability. There are two important points to note about the relation between the two repertoires. (1) Inspectors and other enforcement agents do



**Fig. 5.1** Interlocking social worlds

Social worlds are characterized by dual (C + R) repertoires, in general, but this also drives newly emerging “bridging” social worlds, like the enforcement and compliance world which bridges firms (certain departments and individuals in firms) and inspectors. In the C-repertoire, negotiation and interpretation are central. The inspector checks whether the firm remains within certain levels of compliance, and interprets violations as accidents for which the firm can be excused. The inspectors can refer to the official regulations and sanctions—that is their R-repertoire—but only as a last resort. If they were to apply the regulations literally, that might lead to system-wide protests and refusal (one could see this as a form of civil disobedience), and thus be unproductive.<sup>13</sup> Firms have their R-repertoire of profit maximisation for their shareholders, and guaranteeing continuity of the firm. Again, strict application of this R-repertoire may be counterproductive. Compare how in the 1960 and 1970s, firms like the ITT conglomerate were disavowed as focusing on profit only, and suffered from the allegation.

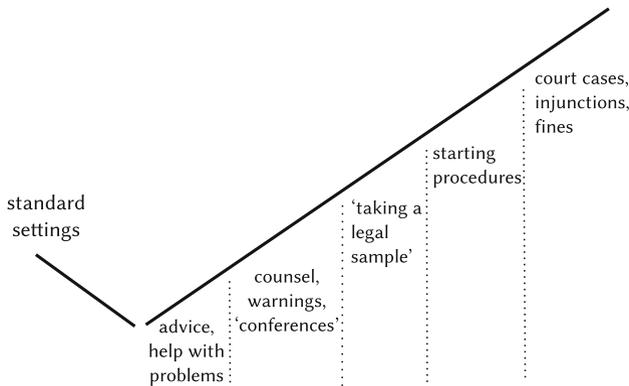
These social worlds, and social worlds in general, depend on the productive duality of their C- and R-repertoires, but also on their external links, through their R-repertoire or otherwise, as illustrated in Fig. 5.1. Environmental and safety staff in firms create a link with other departments in the firm and with overall management. Inspectors out in the field return to their office in the government ministry, and have to justify their actions there.

The enforcement world functions between two extremes (‘poles’). One extreme occurs when the links to other social worlds are completely backgrounded, and interactions within the world are the focus. The inspectors as well as the staff of the firm “go native”, their allegiance is to their shared world. This is also a way to operationalize trust. In the other extreme, the inspectors and the staff of the firm

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not see it as their task to enforce the law. Instead, their goal is to protect the waste treatment system from harm, to solve effluent problems (158), to contribute to an adequate solution to the pollution problem faced in a given case while minimizing enforcement costs (139). (2) The enforcement of the law is a resource in the enforcement process, not an end in itself (163).

<sup>13</sup>This can be linked to the notion of ‘functional forgiveness’ [13].



**Fig. 5.2** Graded persuasion in the enforcement process

are spokespersons for their respective worlds, and they interact strategically. Since they are bound together (mutual dependency), one can speak of a strategic game and see their actions as moves in a strategic game. This is actually how the actors will interpret actions of others – seeing them as players in a game rather than members of the same social world.

In practice, mixed or compromise arrangements occur, and shift over time between the two poles. And negotiations occur, building on how inspectors construct a gradient of force to keep the firms in line. In Fig. 5.2, I visualize the gradient at the right hand side, showing the practices and measures as used at the time, going from soft to hard. The line at the left hand side about standard setting is just a reminder that the gradient emerges because of standard setting; it is not part of the graph. This visualization has the same form as the so-called enforcement pyramid, proposed by [3] to operationalize how enforcement agents can start with a persuasive enforcement style and escalate punishments only when a business consistently refuses to cooperate. It has been noted that the enforcement pyramid reflects how inspectors are inclined to behave in practice. When shown to them, inspectors perceive it as common sense, and react saying “we already do that” [15]. What I am adding is that the gradient of force only works when the firms need to remain members of the shared world, i.e. be good firms. Clearly, this is a grey zone, and one which can be productive exactly because it escapes proceduralization [7].

## 5.4 Conclusion

I have analysed such grey zones as a general phenomenon, especially in professional practices, up to the practice of doing science in the lab, and used analysis in terms of contingent and rational repertoires to show the structure of the situation. The point is that grey zones are not just grey and muddled, but they allow realisation

of productive outcomes in spite of conflicting, or just different, objectives, here in terms of safety and reduction/avoidance of danger. But they can also lead to neglect of repair work and create problems and accidents. That is where the R-repertoire comes in as a constraint. Not because the rules and norms in the R-repertoire are good by definition, but because they create an external reference point to avoid the C-repertoire interactions shifting towards ‘anything goes’. In that sense, regulation is not about specifying what is safe and to be implemented, but like a ‘regulative ideal’ in the sense of philosopher Immanuel Kant in his *Kritik der reinen Vernunft*.

I am willing to argue that such grey zones are necessary to have late-industrial societies survive without too many unsafe situations and accidents, but recognize that they constitute a second-order risk, of becoming shady dealings that serve the interests of the immediately involved actors, but not the management of safety. Our overall danger culture of industrial society, as it has emerged and solidified is not of much help here. Transparency, enforced from above, may be counterproductive, as it creates countermoves, as when the USA created the “Sunshine” Act requiring all government documents to be public: there was a shift away from documents to oral interactions. More important for mitigating the second-order risk are social dynamics, in particular whistle blowing (from the inside) and critical journalism and other external engagement. When accidents or near accidents, and the resulting investigations, shine light on partly hidden practices and reveal the compromises made, this could be taken as a *prima facie* argument for transparency.<sup>14</sup> But transparency may reduce the scope of repair work, which is essential for actual safety. In addition, disclosure has its own social dynamics, which might constitute a third-order risk, of creating witch-hunts of practices that were actually relatively productive.

Whatever the new paradigm about risk control will be, it has to recognize the actual practices that assure (but sometimes undermine) safety, to some extent. And to understand how these play out at different levels: local practices, meso-level practices of communities/worlds, and macro-level responsibilities for regulation, as well as cultural aspects. The new paradigm, whatever else it does, should reinforce the good elements in the practices of the danger culture of late-industrial societies, based on an understanding of the patterns and dynamics at play.

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<sup>14</sup>I am indebted to Eric Marsden for drawing my attention to the aspect of transparency, and offering considerations like this one.

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