Understanding complex forms of power in late modern settings:

A historical study of the government of workplace accidents in the last century

Abstract. In the last decades, organizational research has been evidencing more and more subtle forms of power to be at play in the workplace. It is intriguing though to observe the concomitant persistence, and even extension in scope, of the more traditional forms of hierarchical and bureaucratic control these were said to displace. How is the coexistence in late modern settings of such apparently contradictory forms of power to be explained? We here argue that, far from excluding one another, these distinct modes of control instead support each other so as to reinforce the effects of domination. To substantiate this view, we draw on Foucault's conceptualization of bio-power and intuition about the interrelation of disciplinary and security apparatuses. Through a historical study of the practices developed around workplace accidents in the French construction industry over the 20th century, we actually show the strong intertwining of both types of apparatuses and put to light the mechanisms by which they nourish each other. We thus contend that any single form of power can hardly be grasped in isolation from the others it connects to and that critical attempts oriented toward the resistance to current complex forms of domination may gain from acknowledging this.

Key words. Foucault; bio-power; disciplinary apparatus; apparatus of security; workplace accidents

"The National Assembly adopted at first reading, on November 3rd, the bill funding the Social Security for the year 2010. On the menu is included the introduction of a bonus-malus system on contributions to workplace accidents and occupational diseases, intended to encourage employers to improve health and safety at work. (…) The Senate is expected to turn to look at the text from November 9th."

Le Moniteur des Travaux Publics et du Bâtiment*; 2009, November 6th*

"We have dedicated staff who are there to ensure that, on our construction sites, our suppliers and subcontractors fully comply with social regulations…"

Xavier Huillard, CEO of Vinci, in Le Moniteur des Travaux Publics et du Bâtiment*; 2013, April 26th*

Drawn from the domain of workplace safety, the two quotes put together as incipit to the present article feature an intriguing conundrum. On the one hand, one can observe that "intelligent" forms of control have been occupying a growing place in workplace environments. This includes techniques and procedures that rely on calculation devices and statistical means to orient conducts (Miller and Rose, 1990; Weiskopf and Munro, 2012) as well as modes of management that leave employees some room of manoeuver for developing their creative and entrepreneurial skills (Adler and Obstfeld, 2007; Adler and Chen, 2011; Boltanski and Chiapello, 2005). On the other hand, this trend seems to not have impeded the persistence, and even extension to new actors, of more traditional forms of control, which embody, albeit often in softened ways, conceptions inherited from the bureaucratic age (Courpasson, 2000; Courpasson and Clegg, 2006). When applied to the case of workplace safety, the extension to subcontractors and temporary agency workers of mandatory protective equipment for instance demonstrates such persistence. The coexistence of these seemingly antithetical modes of power thus raises questions about the way both interrelate within late modern settings. We here argue that, far from excluding one another, these distinct modes of control rather tend to support each other and as such reinforce the effects of domination in late modern settings.

While both forms of power have so far mostly been studied in isolation from one another, we here contend the importance of adopting a more integrative approach to power in order to solve the conundrum presented in introduction to the present article and thus further unveil the actual mechanisms that support domination in organizations. In order to bridge both streams of management research, *i.e.* the one focusing on direct forms of control and the one focusing on more recent subtle ones, we propose to show how their distinct objects of study may be best represented as building blocks within complex multi-levelled forms of power. We thus contend that any single form of power can hardly be grasped in isolation from the others it connects to and that critical attempts oriented toward the resistance to current forms of domination may gain from acknowledging this.

In order to substantiate these ideas, we choose to turn to one of the thinkers who proved instrumental in theorizing power and its multiple visages. Indeed, Michel Foucault not only introduced the notion of discipline to conceptualize the forms of control that orient practices by directly addressing the body (Foucault, 1977) but also theorized, through his concept of governmentality and its related mechanisms of security, more intelligent forms of control that favour action at distance to eventually influence practices (Burchell et al., 1991; Foucault, 2009). While these contributions have largely fed organizational literature on power, although still to a lesser extent in the case of the latter (Munro, 2012; Pezet, 2004), what is less known and remains so far largely untapped in management research is Foucault's interest for the articulations that may link such distinct forms thereof, a concern that only became visible in his late lessons at the Collège de France (Foucault, 2002, 2008, 2009). We thus choose to draw on these writings so as to further understand the way disciplinary and security apparatuses may combine within complex augmented forms of power in late modern settings,

To this purpose, we engaged in a historical study (Carter et al., 2002; Rowlinson and Carter, 2002) of the practices developed around workplace accidents in the French construction industry over the 20th century. The identification of these changing practices was done through the lens of the dominant trade journal in this industry. Our data is a collection of articles ranging from 1906 to 2007, on which we applied some techniques of discourse analysis. This led us to identify three main periods of time, each characterized by a different set of practices. The study of these various combinations allowed us to better understand how apparatuses of power of distinct natures were able to articulate so as to multiply effects of domination.

The paper is organized as follows: first, we present the different forms of power conceptualized by Foucault and their mobilizations in management research before proposing to integrate them in a more holistic manner as a means to characterize complex multi-levelled forms of power. Then, we apply this new theoretical lens through a historical approach to the practices around workplace accidents in the French construction industry over the 20th century. Finally, we display and discuss our findings.

Beyond the dichotomy between disciplinary and post-disciplinary studies: writing one more time Foucault into organizational analysis

Foucault's contribution to management and organization research has been acknowledged a first time for evidencing the pervasiveness of disciplinary power and has started to be so a second time then for revealing the novel and more subtle forms of post-disciplinary power that have progressively appeared to take over within organizations. We argue here that turning again to Foucault's works will be fruitful at least a third time in grasping how both forms of power nourish each other, a step that may well prove instrumental in further unveiling and thus resisting the current forms of domination that colonize late modern settings. Within this section, in order to develop this line of argument, we first resituate both disciplinary and post-disciplinary streams of organizational thought. We then explain the reasons why Foucault's late works may be of help for joining both streams in a more holistic approach, thus not considering anymore disciplinary and security-based forms of power in isolation, but rather as complementary building blocks in support of complex forms of government.

From disciplinary to post-disciplinary studies

Within management and organization studies, the name of Foucault is first and foremost associated with the concept of disciplinary power and the inevitable metaphor of Bentham's panopticon (Carter et al., 2002; Knights, 2002; Munro, 2012). By suggesting that prison was nothing more than the paradigmatic example of the pervasiveness of disciplinary techniques into institutions as diverse as the army, the hospital, the school or the workshop, Foucault (1977) indeed left the door wide-open for management scholars to study the various aspects of disciplinary-based domination within organizations (Burrell, 1988; Hassard and Rowlinson, 2002; Sewell, 1998; Townley, 1993, 1996). This overwhelming focus on the disciplinary Foucault has been criticized on several occasions for either its opportunism

(Knights, 2002) or its crude reductionism (Carter, 2008; Knights, 2002), which progressively led some organization scholars to tap into more recent aspects associated with Foucault's late works (Carter, 2008; Munro, 2012).

Foucault's late works may actually be summed up as developing various aspects of the construction of the subject, that is the way the relations of selves to themselves and others get historically constructed through the recourse to various techniques (Fleming and Spicer, 2007; Lambert and Pezet, 2011; Starkey and Hatchuel, 2002). Despite the relative scarcity of organization studies that build on these late works when compared to the disciplinary corpus, two streams may be broadly identified among these *post-disciplinary* contributions. The first one borrows from his *History of Sexuality* (Foucault, 1985, 1986) to develop our understanding of organizational aspects dealing with ethics, aesthetics and identity (Bardon and Josserand, 2011; Skinner, 2012; Starkey and Hatchuel, 2002). The second one borrows from the lectures he gave at the Collège de France at the end of the seventies (Foucault, 2002, 2008, 2009) to deal with the forms of government that have come to develop in relation to the rise of capitalism and modern western liberal societies. Also referred to as governmentality (Burchell et al., 1991; Dean, 1999), these forms of government cover the

> "institutions, procedures, analyses and reflections, calculations, and tactics that allow the exercise of this very specific, albeit very complex, power that has the population as its target, political economy as its major form of knowledge, and apparatuses of security as its essential technical instrument" (Foucault, 2009: 144)

Despite its strong resonance within research fields such as political economy, sociology or geography, the concept of governmentality has led to fewer publications and debate in organization journals to date (Munro, 2012: 352). Among management disciplines, it is actually in the field of accounting that governmentality has first found its way (Carter, 2008; McKinlay et al., 2010; McKinlay and Pezet, 2010), driven by the reflection on the calculative features promoted by accounting tools (Miller and O'Leary, 1987; Miller and Rose, 1990). Within organization studies, it has mainly contributed to the field of HRM (Weiskopf and Munro, 2012).

With the present article, we pursue the endeavour for further developing the contribution of governmentality studies to the field of organization studies (Munro, 2012). In particular, we want to draw on the concept of apparatus of security (Foucault, 2008, 2009), which Foucault

(2009) introduces as the "essential technical instrument" deployed by liberal forms of government. But we actually want to go beyond that point by looking at how such apparatuses of security come to interrelate with other apparatuses, especially disciplinary ones, thus linking both disciplinary and post-disciplinary approaches into a more holistic framework which may illuminate the foundations of current complex forms of domination. To reach this objective, using Foucault's own works as a starting point makes a lot of sense for he himself situated both disciplinary and post-disciplinary apparatuses within a broader framework of analysis to which he gave the name of *bio-power* (Foucault, 1978, 2002).

Bio-power: encompassing both disciplinary and post-disciplinary power

Foucault (1978; 2002) defines bio-power as a power that is exerted over life. But unlike the absolute power of life and death that the sovereign used to exert on his subjects until the 17th century so as to punish those disregarding his laws, bio-power is defined in a positive way, *i.e.* a power that is at least as much productive as it is repressive. Indeed, bio-power designates a set of techniques that – from the 17th century onwards – have aimed to "administer, optimize, and multiply [life], subjecting it to precise controls and comprehensive regulations" (Foucault, 1978: 137). Foucault distinguishes two main modalities under which bio-power developed over time: precise controls relate to disciplinary techniques that address the human body as a tool, while overall regulations relate to mechanisms that address the body as a species (Foucault, 1978, 2002, 2009).

This first set of techniques – which developed around the control of physical bodies – was the first to appear during the 17th century. These techniques dealt with the body so as to increase both its utility and docility, so as to maximize its forces and at the same time to tame it (Foucault, 1978: 139). The disciplinary apparatuses that this modality of bio-power enacts have become visible across a wide range of institutions, be they the school, the shop floor, the hospital, the army or – obviously – the prison (Foucault, 1977).

The second set of techniques – which developed around the control of populations and is also referred to as *bio-politics* – appeared later, namely during the 18th century. It focused on the biological processes (life, death, health, lifespan, etc.) and the factors that affect them (Foucault, 1978: 139). Bio-politics may be seen as targeting whole populations in every

aspect of human life – through health, hygiene or social insurance policies for instance –, so as to protect and develop them as collective entities (Foucault, 2002).

This is his definition of bio-power which actually allows Foucault to delineate three possible apparatuses of government: one that existed before the emergence of bio-power, namely the juridico-legal apparatus, and two new ones that bio-power introduced, namely the disciplinary and security apparatuses (2002: 239–241; Foucault, 2009: 20–21). We now define each of these three apparatuses and, wherever possible, also characterize them along the three dimensions along which they, according to Foucault, present contrasted features, namely the ways these various apparatuses relate to space, to hazard (or to the event) and to norm (Foucault, 2009). In order to illustrate these idiosyncratic features, he in particular contrasts disciplinary apparatuses with apparatuses of security (Munro, 2012: 351).

Juridico-legal apparatus. In this first type of apparatus, law defines what is forbidden, and breaking it triggers a punishment. The juridico-legal system provides first a strict and binary cut-off between what is permitted and what is not, and then a correspondence scheme between a type of forbidden deed and a type of punishment. As such, this apparatus of government is typical of the exercise of sovereignty, *i.e.* the relationship that links the sovereign prince to his subjects throughout his territory and, for this reason, may as well be referred to as a juridico-legal or *sovereign* apparatus (Foucault, 2009: 92–93).

Disciplinary apparatus. This second type of apparatus complements the law by surveillance and correction, with the former aiming to prevent forbidden deeds by controlling the activities of potential culprits, and the latter – instead of limiting the consequences of forbidden deeds to punishments – introducing a series of measures aimed at correcting the behaviour of culprits. These surveillance and correction techniques may, for instance, involve police, medicine or psychology. More generally, rather than merely defining what is forbidden, the disciplinary apparatus tends to actively promote what is to be done. Indeed, it first defines a model to be followed, and then tries to lead people and deeds so as to conform to this (Foucault, 2009: 84–85).

Regarding its relation to space, a disciplinary apparatus can be viewed as centripetal in the sense that it strives to strictly delimit a space where it isolates the phenomenon being studied. Within this delimited space, the disciplinary apparatus fully exerts its power through boundless control of every aspect of the objects it circumscribes (Foucault, 2009: 67).

In order to characterize its relation to the event, Foucault provides the phenomenon of grain shortage as an example (Foucault, 2009: 53–54). Like the juridico-legal apparatus, the disciplinary apparatus considers the scarcity of grain as an evil that needs to be prevented. Both technologies seek to avoid the occurrence of the phenomenon before it even becomes an element of reality and, to that purpose, activate rules and laws. But while the juridico-legal apparatus forbids certain behaviours (through, for example, export or stock interdictions), the disciplinary one instead actively supports appropriate behaviours (through, for example, price control by the state).

In terms of its relation to the norm, the apparatus of security is described as a *normation* process (Foucault, 2009: 85). Which means that, by first setting a model to be followed and conformed to, the disciplinary apparatus places the norm at the forefront of its concern. It is only after the norm has been defined as the prescribing reference point that it becomes possible to draw the line between what is normal and what is abnormal (Foucault, 2009: 85).

Apparatus of security. The third kind of apparatus of government theorized by Foucault tends to reposition the phenomenon being studied (that is, the undesirable deed) within a series of probable events. Since the phenomenon cannot be eradicated, the apparatus of security deals with its probabilities of occurrence. As such, it is a technology of government that directly points to the notion of risk (Dean, 1999; Defert, 1991; Rose, 2001, 2007). The apparatus of security no longer deals with a phenomenon by separating the permitted from the not permitted. Drawing on a cost-benefit calculation, it instead looks at what would constitute an optimal average for the phenomenon to happen and what would constitute a ceiling that it would be unacceptable to exceed (Foucault, 2009: 20–21). In order to bring the most unfavourable trends back in line with the optimal ones, the apparatus of security will consider the broad range of elements that influence the phenomenon. It will try to act on elements of the reality to which the phenomenon pertains, such elements being envisaged as governed by natural laws (Foucault, 2009: 67–71). What is being studied now is thus the knowledge of these natural laws and an expertise in the way these various elements of reality interact with the phenomenon in question (Foucault, 2009: 59–60).

To be precise, the aforementioned laws may sometimes be described as "quasi-natural" rather than "natural". Foucault indeed acknowledges a major evolution in the way neo-liberal thinkers from the 20th century have understood these laws as compared to liberal thinkers

from the 18th century (Foucault, 2008: 117–118). In the mind of the former, it has become necessary for allowing the functioning of such laws to establish solid rules of the game that support or even promote the apparatus of security. In their view, "natural" regulation by the market can for instance not happen without the active promotion of free enterprise and competition, which is the reason why neo-liberalism is rightly defined by its concern for regulation in opposition to the laissez-faire of the early liberals (Foucault, 2008: 131; Rose, 1996).

When it comes to space, the apparatus of security can be thought of as centrifugal: it reintegrates the phenomenon in question within its broader environment (its *milieu* in Foucault's own terms), opening the phenomenon to a vast network of relationships between the various elements of reality that comprise this environment. Within this open space, the apparatus does not strive to control everything but rather allows the interplay of the natural – or quasi-natural in the neo-liberal frame – processes that govern these elements of reality so as to achieve its ultimate objective (Foucault, 2009: 69). For Foucault, it is therefore no coincidence that the emergence of apparatuses of security in the course of the 18th century corresponded to the appearance of new approaches to the design of modern cities (Foucault, 2009: 26). Before then, the city had tended to be delineated as a walled-up space, socially and economically separated from the countryside. Under the pressure of growing demographics and the push from commercial development, the city started then to be repositioned within a broader space of economic circulations.

The example of grain shortage is useful for understanding what characterizes the apparatus of security regarding its relation to the event. Unlike the juridico-legal and disciplinary apparatuses, the apparatus of security takes a neutral approach to the phenomenon of grain shortage, which it considers neither evil nor good. Grain shortage is now envisaged as an element of reality, and it is through letting other elements of reality – themselves understood to obey natural or quasi-natural laws – play their role that it becomes possible eventually to exert an indirect influence on the shortage:

> "… [it is] an apparatus for arranging things so that, by connecting up with the very reality of [grain price] fluctuations, and by establishing a series of connections with other elements of reality, the phenomenon is gradually compensated for, checked, finally limited, and, in the final degree, cancelled out, without it being prevented or losing any of its reality." (Foucault, 2009: 59–60)

Foucault also provides examples of how such security apparatuses get accommodated during the 20th century in the frame of neo-liberal policies (Foucault, 2008). For American neo-liberal thinkers, criminality is for instance thought as the outcome of a general market for crime (Foucault, 2008: 248–256). Since potential criminals arbitrate between advantages and drawbacks they expect from their crime, criminality will be fought by elevating the level of drawbacks so as to generate a negative demand for crime. Whatever the example, what becomes important is then the knowledge that is developed about the natural or quasi-natural laws that govern these elements of reality. Unlike the disciplinary apparatus, the apparatus of security will not aim to control everything via the application of a set of constraints, but will instead draw on this knowledge to allow the relevant elements of reality to interact freely with the phenomenon being studied (Foucault, 2009: 59–60).

In terms of norm, the apparatus of security is rightly defined as a *normalization* process (Foucault, 2009: 85). It first engages statistical techniques to show what is normal and what is abnormal. Detailed cross-population analyses (across areas, ages, genders, etc.) enable the display of different normality curves. Having identified some of these differentiated curves as more normal than others, the apparatus of security aims to bring the less favourable curves back in line with the more favourable ones understood to be norms. Therefore, unlike in the disciplinary apparatus, the norm no longer comes first; instead, it stems from studying the normal and the abnormal (Foucault, 2009: 91).

Having defined the three types of apparatus theorized by Foucault and detailed their most salient features, we now come to the question of their relations.

Combining distinct apparatuses into complex forms of power

When explaining his typology of apparatuses of government, Foucault first provides an illustration with three paradigms drawn from the example of the treatment of diseases: leprosy, plague and smallpox (Foucault, 2009: 24–25). The juridico-legal apparatus is exemplified by the treatment of lepers during the Middle Age, when a body of law and rules organized a binary split between leprous and non-leprous people. The disciplinary apparatus was instantiated by the treatment of plague victims from the end of the Middle Age until the 17th century (Foucault, 1994: 218; McKinlay, 2009). Areas where the plague was detected were quarantined and put under the surveillance of inspectors, who forced inhabitants to

conform to strict rules on where they went and when, what they ate, etc. Finally, the apparatus of security was instantiated by the treatment of smallpox from the 18th century onwards – or, more generally, by the inoculation techniques that appeared then. These techniques now deal with statistical effects measured on whole populations so as to determine and constantly refine inoculation strategies (Foucault, 2009: 85–91).

Although these examples may give the impression of forming a straightforward historical sequence, Foucault firmly rejects the simplistic idea that these three apparatuses of government simply follow one another:

> "… there is not a series of successive elements, the appearance of the new causing the earlier ones to disappear. There is not the legal age, the disciplinary age, and then the age of security. Mechanisms of security do not replace disciplinary mechanisms, which would have replaced juridico-legal mechanisms. In reality you have a series of complex edifices in which, of course, the techniques themselves change and are perfected, or anyway become more complicated, but in which what above all changes is the dominant characteristic, or more exactly, the system of correlation between juridico-legal mechanisms, disciplinary mechanisms and mechanisms of security." (Foucault, 2009: 22)

To sum up, apparatuses of security are better understood when seen on one hand as combinations of original techniques involving the statistical control of populations, and on the other hand as combinations of reactivations or transformations of previous juridico-legal and disciplinary techniques (Foucault, 2009: 23–24). For instance, whereas the smallpox treatment evidences new techniques that rationalize hazard and probabilities, the apparatus of security that has emerged in that way still relies on disciplinary techniques such as the surveillance of vaccinated people. For this reason, we intend in the present paper not only to unveil the active role of apparatuses of security in late modern settings but also to explain how such apparatuses articulate with juridico-legal and disciplinary apparatuses to form original combinations thereof. Foucault's argument indeed suggests that it is only under such conditions that we may fully grasp the complex nature of power within late modern settings. To further substantiate this intuition, we now turn to our empirical setting, that is to say workplace accidents in the French construction industry over the 20th century.

Data and methods: a historical approach to workplace accidents in the French construction industry over the 20th century

In order to unveil the mechanisms that link disciplinary and security apparatuses in late modern settings, we engage in a historical study (Carter et al., 2002; Rowlinson and Carter, 2002) of the practices that developed around workplace accidents in the French construction industry over the 20th century.

Empirical site: workplace accidents in the construction industry

Our empirical setting is the field of workplace accidents in the French construction industry. The choice of such a setting is not fortuitous since it relates to the third of four domains Foucault (2002: 245) indicated as of particular relevance for observing the development of post-disciplinary power:

> "I am simply pointing out some of biopolitics' starting points, some of its practices, and the first of its domains of intervention, knowledge, and power: biopolitics will derive its knowledge from, and define its power's field of intervention in terms of, the birth rate, the mortality rate, various biological disabilities, and the effects of the environment." (Foucault, 2002: 245)

Foucault points out that these various disabilities include accidents as well as infirmities and various anomalies, thus gathering within the means of action deployed by bio-politics not only medicine or hygiene but also such subtle mechanisms as insurance, individual or collective savings, etc. (Foucault, 2002: 244). In the western world, the concern for workplace accidents has grown with the development of capitalism (Aldrich, 1997) and has always been especially preeminent in the construction industry (Gherardi and Nicolini, 2000; Gherardi et al., 1998). For instance, the first massive strike ever reported in France was one of Parisian masons demanding better working conditions as early as 1848. And today, the construction industry remains the most dangerous industry to work for in France, although it has received the attention of public authorities for decades (Daudigeos, in press). Many public controversies have continued to arise in the French media over recent years around the problems of assuring safety at construction sites, providing further evidence of the durable relevance of this setting to our concern for workplace accidents.

Research design: a historical study of practices

Since our aim was to evidence the effects of various technologies of government on the practices dealing with workplace accidents, or to say it differently the way apparatuses of different kinds have contributed to orient the practices in our chosen domain over the last century, we adopted for studying our object a historical lens (Barratt, 2008; Carter et al., 2002; Rowlinson and Carter, 2002). More precisely, and in line with most Foucauldian management studies, we applied the kind of approach that is usually referred to as genealogical (Burrell, 1988; Dean, 1994; Knights, 2002). Exemplified by *Discipline and Punish* (Foucault, 1977), this approach is interested in various historical arrangements of power-knowledge and insists on the contingencies that offer conditions of possibility for such arrangements to happen. Among these contingent elements, Foucault especially insists on the role that is played by the techniques and technologies that come to be available at a certain point in time (Foucault, 1977, 1978). The focus is thus on practices, understood as the various "procedures" that compose a "microphysics of power" (de Certeau, 1984: 45–46).

The main achievement of such a historical approach, in organization studies and elsewhere, is usually acknowledged as the unveiling of the precariousness of current arrangements (Barratt, 2008; Burrell, 1988). By scrutinizing the past and evidencing practices that differ from the ones of today, this approach indeed shows the contingency of our current ways of doing and thinking, whose taken-for-grantedness can thus more easily become questioned. The recourse to history actually proves to be a powerful means for contesting the prevailing common sense that supports nowadays arrangements and their related forms of domination. This is in this sense that the term of "history of the present", which was coined by Foucault (1977) himself, must be understood (Dean, 1994; Knights, 2002; Miller, 1986; Miller and O'Leary, 1987).

In order to document our study, we chose to rely on two sources of data. Firstly, we turned to a weekly[1] trade journal called *Le Moniteur des Travaux Publics et du Bâtiment*[2] (Franzosi, 1987). For it was founded in 1902, the recourse to this medium allowed us to cover a period of more than a century. Additionally, this medium has occupied a central and unique position in the construction industry in France since its creation, even becoming from the 1960s the

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[1] Once a fortnight from 1902 to 1940, and weekly since then.

[2] In English, *The Journal of Construction and Publics Works*.

most widely distributed trade journal in France[3]. Lastly, its readership includes the broadest range of professionals involved in the issue of workplace accidents. The breakdown by profession of its readership (Figure 1) demonstrates the broad spectrum of actors it reaches: contractors, architects, manufacturers, property developers, engineers, etc. As a consequence, we hypothesized that the study of this medium would allow us, by identifying the actors, actions and material elements engaged around the issue of workplace accidents, to reconstitute the sceneries of practices that were typical of different points in time. In order to avoid the drawbacks linked to the reliance on this single source and be able to triangulate our findings, we complemented these data with a second source, namely some referential historical studies related to our domain of inquiry. This includes François Ewald's book *L'Etat providence* (Ewald, 1986) and Jacques Le Goff's book *Du silence à la parole: une histoire du droit du travail en France des années 1830 à nos jours* (Le Goff, 1985).

Insert Figure 1 about here

Data collection and analysis: characterizing different sets of practices in terms of their apparatuses of government

We had full access to all the issues of the targeted trade journal from number 1 in August 1902 to the present time, except some rare missing issues. To select the articles related to workplace accidents, we drew up the following list of keywords, at least one of which must be present within each selected article: accident, safety, occupational injury, prevention, precaution, disability, unfitness for work, death, victim, injury, wound, casualty, protection, work inspector, and compensation. We also opened the list to words based on the same lexical roots: "dead" for "death", "injured" for "injury", etc. Using this selection criterion, we obtained a first set of articles. Given the huge amount of articles matching our criterion, we decided to sample one year out of every 10 from 1902 to 2010. Because of the partial publication of the journal during the two world wars, the best coverage was obtained by selecting the years ending by 7. Still, the absence of several issues in the year 1907 led us to replace it with the year 1906.

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[3] In 1936, it acquired its main competitor: *Le journal des travaux publics, du bâtiment et des fournitures administratives* (in English, *The Journal of Public Works, Construction and Administrative Supplies*).

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We then carefully read all these articles to exclude those that contained one of these keywords but were in fact not related to workplace accidents in the construction industry. We based our selection on the definition of an accident generally agreed by insurance companies – as a situation resulting "from a violent cause, external or involuntary" (e.g. Bedour, 1966). As an illustration of this, the asbestos tragedy in the construction industry was for instance not considered as an accident. We thus collected a total of 177 articles covering the whole period of analysis on a discrete basis. Articles vary from one hundred to several thousand words. We then built a corpus of all collected articles. A signal variable was additionally created to link each article with its year of publication.

Our data analysis then followed a three-step process. As a first step, we performed some content analysis on our corpus with the aim of breaking it down into sections that would reflect distinct sets of practices taking place over time. More precisely, we applied a descendent hierarchical classification model to our corpus, a methodology of textual analysis which is of particular relevance for engaging in longitudinal analyses of data covering long periods of time (Mohr, 1998; Ventresca and Mohr, 2002). To this purpose, we used a French software program called ALCESTE, which looks at the distribution of lexical forms within a corpus through the analysis of repeated segments and lexical association (Kalampalikis, 2003; Reinert, 2003). More precisely, it tracks co-occurrences of lexical forms. Their exact format, their position within a sentence or their number is not significant; what matters is their absence or presence within text segments, which could indicate a deviation from a uniform distribution of words within the entire corpus that is analysed. Such a deviation may signal the presence of distinctive practices with respect to the rest of the corpus. The hierarchical classification is thus a process of categorization and reduction. The full corpus is indeed progressively divided into distinct sections that maximize such deviations from uniform distribution. The outcome of ALCESTE classification is twofold. First, it delivers the classes of lexemes (a lexeme includes the full set of forms taken by a given word) that are the most significantly associated with the sections it has been able to isolate. Classes are composed not only of the lexemes drawn from the words extracted from the articles but also of signal variables, *i.e.* the years significantly associated with the class in our case, thus allowing us to relate the vocabulary describing a given set of practices to the period of time it covers. Second, ALCESTE also provides an overview of the segments of the corpus which are the most representative of a given class.

As a second step, we then analysed the classes of lexemes isolated by ALCESTE in order to identify the sets of practices and underlying apparatuses of government they were reflective of. For each of the distinct classes identified in our first step, we therefore sorted the significantly associated lexemes according to the three dimensions used by Foucault to characterize his apparatuses – namely space, hazard and norm. To facilitate the operationalization of this framework, we translated each of its dimensions in the following terms: we considered that the relationship linking a given set of practices to space would be made visible through lexemes identifying people, places and environmental factors, the relationship to hazard (or the event) through the lexemes identifying the various descriptions of the accident, and the relationship to norm through the lexemes identifying the various material elements, mechanisms and actions that influence behaviour. The lexemes that were not perceived to relate in any way to one of these three dimensions were simply put aside. Each of the three authors did first her (or his) own categorization according to this operational definition. The differences found were then discussed collectively and an agreement was reached for each gap to be resolved.

As a third and final step, we used the grid constituted at step two to interpret each distinct set of practices in terms of its underlying apparatus. Within each dimension, we looked at the kind of features the lexemes were expressing, thus, in line with Foucault's typology, potentially allowing the recognition of a given kind of apparatus of government at work. For instance, regarding the dimension of space, we checked whether the related lexemes of a given class were rather indicative of a centripetal or centrifugal approach to workplace accidents. Regarding the dimension of hazard, we interpreted whether the event was rather narrowly defined or resituated in a broader context. Regarding the dimension of norm, we similarly checked whether normality was defined *a priori* or came as a result of statistical computation. At this stage, in order to minimize the risk of misunderstanding the meaning to be granted to a given lexeme, we systematically turned to the paradigmatic segments of the corpus provided by ALCESTE as illustrations of a given class. Ultimately, once all sets of practices had been characterized in terms of their underlying apparatus of government, we engaged in the understanding of the relationships between the sets of practice and their associated apparatuses that were operating during the same periods of time. This is at this stage that we extensively referred to our secondary data, namely historical literature referring to the issue of workplace accidents (Ewald, 1986; Le Goff, 1985), to grasp the overall context

in which distinct apparatus of government would come to be articulated. By doing so, we were therefore able to more finely understand how apparatuses of different kinds may interact with one another.

To summarize, our intent is to unveil the mechanisms that may link disciplinary and security apparatuses in late modern settings in order to strengthen our understanding of the complex scaffoldings that support current forms of domination. To that purpose, we engaged in a historical study of the practices that developed around workplace accidents in the French construction industry over the last century based on a multistep analysis of some material extracted from a leading trade journal. We now turn to our results.

Findings: relating security and disciplinary apparatuses

ALCESTE's descendent hierarchical classification model led us to the identification of three main periods, each corresponding to an original set of practices. As shown by Figure 2, the first period covers the first half of the century until World War II (WWII), the second goes from the end of WWII to the 1970s and the last from the 1970s to nowadays. These sets of practices were then interpreted as the effects of three different combinations of apparatuses of government through time. Table 1 shows, for all the classes identified by ALCESTE, the outcome of our categorization of the corresponding lexemes according to the three dimensions (space, hazard, norm) of our framework. In the rest of the findings section, we chronologically present these three periods, systematically introducing the sets of practices and associated apparatuses of government that inhabit them, and detailing the relationships between these apparatuses.

Insert Figure 2 about here

Private insurance and the court of justice in the first half of the 20th century: a combination of juridico-legal and security apparatuses

Table 1 shows, for the first class identified by ALCESTE, the outcome of our categorization of the lexemes. We named this set of practices JUDICIAL. As we can see from Table 1, the space related to workplace safety is limited to courts, where a judge solves conflicts between employers and employees. The building site and its technical processes are absent in the JUDICIAL set of practices. The event being studied is an offence that leads to a victim. The

articulation of norm is done through the law and a whole range of regulatory tools. As clearly evidenced by Table 1, workplace accidents are mainly understood in the first half of the century as an issue dealing with misdemeanours or offences for which individuals are liable. In fact, this assertion should be considered in relation to the 1898 French workplace accidents law, which set the principle of the employer systematically having civil responsibility for all injuries taking place within his company. As mentioned in our corpus:

> February 15th, 1906: "*Year after year, case laws extend the scope of the 1898 law. Surely this innovation has been making headway.*"

> June 15th, 1906: "*If there is one universally accepted law, it is the one that organizes workplace accidents since April 9th 1898. And it is because its social principle and its humanitarian goal are unchallenged that one should protect it from potential abuses.*"

The key lexeme in understanding the apparatuses governing workplace safety at that time is indeed "inexcusable conduct". The 1898 law divides workplace accidents into two categories. First, in the case where there appears to be inexcusable conduct on the part of the employer, a judge ultimately decides whether it is the personal responsibility of the employer and whether the employee's rights have been violated according to written judicial rules (such as acts, case law and bills). The following excerpts from *Le Moniteur* illustrate the JUDICIAL set of practices:

> January 6th, 1906: "*The article 31 of the 1898 April 4th law prescribes (…) to display in each working place, the text of the laws and the administrative regulations of its execution. An infringement in displaying the law and its related regulations only constitutes a contravention.*"

> May 19th, 1927: "*This definition of an inexcusable conduct may result in two observations. First, in such a serious case, a mere official report drawn up by a public servant is not sufficient to establish the infringing nature of the case.*"

Second, in all other situations, the employer benefits from a penal immunity. Only remains his civil responsibility, which is discharged by having the private insurance it contributes to covering for the cost of the accident. A fixed compensatory amount is paid to the injured worker in exchange for the payment by the employer of an insurance premium.

March 11th, 1906: "*Several times,* Le Moniteur *has dealt with the important issue of the insurance against workplace safety and recommended the clear advantages of mutuality.*"

May 5th, 1927: "*Daily compensation increases due to injured workers with children to secure. Mister Gros proposes in the paragraphs 6 and 7 of the new article that the daily compensation be increased for children less than 18 years old according to the following pattern: 15% of the salary for one child, 25% of the salary for two children, 35% for three children and so one adding 10% per child.*"

In the former case, we recognize the template of a juridico-legal apparatus as defined by Foucault. The law defines what "inexcusable conduct" is; it is forbidden, and the law also defines the related punishments. The 1898 law provides a strict and binary cut-off between what is permitted and what is not, and a list of offences with corresponding fines. It gave rise to intense debate on the legal categorization of specific types of misbehaviour, and the related punishments. This led to the adoption of much case law throughout the first half of the 20th century. However, the 1898 law at the same time delineates very specific situations where the responsibility of the employer is questioned. In the latter case, law has nothing to say and other government apparatuses take precedence. The increasing use of private insurance as an apparatus of security in the 19th century has already been studied (Defert, 1991; Ewald, 1991). Thanks to the development of statistical and probability science (Desrosières, 1998), knowledge of the occurrence of workplace accidents and the average cost of these is progressively being developed. With this knowledge, workplace accidents in the construction industry may be considered as a whole-population sample and managed accordingly. This offers the opportunity to apply the 1898 law to a very small segment of accidents and to let the vast majority of other cases be regulated through apparatuses of security. The organizing of workplace accidents in the first half of the century therefore features a distinctive mix of juridico-legal and security apparatuses. During this period, the two apparatuses appear to be complementary, each governing a well-defined space. They are interdependent insofar as the juridico-legal apparatus defines in hollow the space upon which the security apparatus is to apply. This balance will be disturbed by the political upheaval in France just after WWII.

Public insurance and the rise of the science of accident prevention from 1947 to 1977: a combination of disciplinary and security apparatuses

The three decades after WWII show a group of three distinct sets of practices for workplace safety. Table 1 presents our interpretation of the three categories of lexemes identified by ALCESTE that we have named STATE, TECHNICAL and PROFESSIONAL. In the STATE set of practices, the space is a large territory delimited by public national bodies and the constituencies they want to monitor: "firms", "contractors" and their "subcontractors". The most central actor is Sécurité Sociale, which is organized in regional chambers and committees. In the PROFESSIONAL set of practices, the space for the organizing of workplace safety is even wider, since it is open to international and national events such as "conferences" and "congresses". This space is built up by "doctors", "scientists", "experts", "associations" and the "OPPBTP".

This opening of the space where the technology of government is built up and where it operates resonates with the centrifugal nature of apparatuses of security. Unlike disciplinary apparatuses, security ones tend to situate the event being studied in a broader context to understand which factors may explain its occurrence and how those factors may relate. The term "inter-enterprise" may evidence this tendency to relate events within the space of government. In our case, it is striking that the event – namely the accident – does not appear either in the STATE or in the PROFESSIONAL sets of practices. Instead, in the PROFESSIONAL framework, the emphasis is directed towards the development of a stream of knowledge, a "science" of workplace accidents, which is built on "investigations" and which should be then diffused through "communication", "propaganda", "treaties" and "reports". The following excerpts illustrate the importance of a new body of expert knowledge during this period:

> May, 13th, 1967: "*During this important event, organized for the very first time, two large reports will be introduced in addition to numerous medical and technical papers. The first one, on the medical, social and professional consequences of workplace accidents in the construction industry (Dr Woerth). The second one, on the medical, technical and psychological aspects of workplace accidents prevention in the construction industry: History, current state and perspectives (Dr Perrin).*"

> November 4th, 1967: "*The OPPBTP chief officers took advantage of the first international days of medicine in the construction industry to expose in front of hundreds of experts the advantages and the scope of this safety campaign and urge labour doctors to contribute.*"

This new expertise contributes to the identification of natural or quasi-natural laws that may explain the occurrence of accidents and that nurture the normalization process. All these elements reveal a profound apparatus of security that takes place at that time to govern workplace safety. Nevertheless, the development of this new set of techniques, surprisingly, supports the rise of a sharp disciplinary apparatus that appears to an extent in the STATE set of practices and is wholly unveiled within the TECHNICAL set of practices (see Table 1). As evidenced in Table 1, in the TECHNICAL framework, the space is strictly limited to the building site and, more precisely, to certain technical processes and devices within this place: "wells", "foundations", "crane" and "vehicles". The event is visible again and is represented by very precise facets of accidents such as "falls", "explosion" and "rupture". The normalization process is based on prevention and reparation processes, for example "protection", "precaution" and "rescue", which aim to prevent or limit the effects of accidents. We see a limited space, and a series of events that should be avoided by *normation* processes based on the promotion of adequate practices: all of this constitutes characterized features of disciplinary apparatuses. This is further evidenced by the following extracts from our corpus:

> October 6th, 1957: "*Compulsory devices. These devices are normally included in any construction equipment or should be produced on the building site (...). Chamber of protection from any moving device that could harm someone and that are located at man's height.*"

> November 11th, 1967: "*A rational equipment should include some essential amenities: a good lighting, exhaust ventilation for the people who are working in deep holes (...), the adaptation of work stations, warning signs and information boards…*"

We see here how the "regulatory" "measures" are complemented by surveillance and correction techniques. Here, we can draw some links with the STATE set of practices where "recommendations", "adoption" of adequate practices and "conformity" are distinctive *normation* processes. In the decades following WWII, the state and the rise of a new professional expertise on accidents played a huge role in the organizing of workplace safety. They triggered a further refinement of apparatuses of security and, at the same time, a surge of stringent disciplinary techniques that fully exert their power on every technical aspect of building sites.

Within this period, the development of the security apparatus comes to nourish the disciplinary apparatus, which itself applies to the heart of the technical processes on the construction sites. The State and the professions actually make the articulation between the

two apparatuses possible. Scientific knowledge about workplace safety and accidents allows the development of new standards which are then imposed by the State or disseminated by the professions. And, conversely, the development of new technical knowledge is made possible by the investment of the State in public bodies and research programs as well as by experiments and conferences organized by the professions.

The constitution of a market for accidents and its impact on enterprises 1977–2007: a novel combination of security and disciplinary apparatuses

The last three decades present two distinct sets of practices for workplace safety. Table 1 shows our categorization of the lexemes identified by ALCESTE, and the two sets of practices that we labelled ACCOUNTING and MANAGERIAL. In the ACCOUNTING set of practices (Table 1), the dominant space that is taken over is that of public insurance institutions, *e.g.* CPAM and CRAM, which focus on whole populations ("headcount" and "employees"). The event is not directly represented in the form of the accident itself but rather under its accounting code ('AT' standing for *accident du travail, i.e. occupational injury*). It is also portrayed in a more systematic way in terms of the impact of the accident on life, expressed in levels of seriousness and inability. These different levels also represent official categories of statistical analysis. We may say that the event is not portrayed in its own right but rather using categories that facilitate the understanding of reality. The relation to the norm involves the whole quantification apparatus that is typical of statistics. The features made visible by the ACCOUNTING set of practices, with its focus on cost calculation, are typical of an apparatus of security. The phenomenon and its evolutions are mapped. Differential graphs are produced, detailing the outcomes for each statistical category. The recourse to public institutions ensures the follow-up of the whole population:

> July 16th, 1977: *"[The statistics established every year by the National Health Insurance Fund] allow to following-up the evolution for a year or for a three-year period of the cost of risk in these branches of activity."*

The study of our secondary dataset indicates that the production of quantitative indicators started in the 1940s, with the implementation of the social security system, and progressively developed so as to become salient in the 1970s (Ewald, 1986; Le Goff, 1985). Here, workplace safety issues are translated into economic terms by statistical techniques that have the ultimate goal of setting the price of an accident. Tables are issued that state amounts for

each category of injury. The amount that a given enterprise must contribute to the insurance system is determined by combining its record of accidents in the last years with these various codification tables, for example:

> December 10th, 2007: *"in case of death, the amount that is on your account is equal to 26 times the yearly reference wage. These amounts are only indicative, since they are not directly used for the calculation of your AT rate."*

Through analysis of the ACCOUNTING set of practices, we thus recognize a phenomenon that mirrors the development of the apparatus of security depicted by Foucault in relation to the issue of grain shortage (Foucault, 2009). In the domain of workplace accidents, the translation into economic terms of the phenomenon being studied has the consequence of attaching a price to each kind of injury and so creating incentives in a market where accidents are now governed by the mechanisms of demand and offer, and is understood as obeying natural or quasi-natural laws. The insurance system of contributions creates negative demand for accidents, to which contributing enterprises are expected to respond by striving to reduce their offer of accidents (Foucault, 2008: 259; Pigou, 1920). As in the grain-shortage mechanism, the objective of the apparatus of security is therefore not to directly prevent accidents, but rather to let market mechanisms play their role so that the occurrence of the phenomenon will eventually be reduced and maybe even annihilated.

Interestingly, this apparatus of security feeds some disciplinary apparatuses that are made visible by the set of practices we have identified as MANAGERIAL (Table 1). The space involved in this set of practices is one of private enterprises. The event itself seems to disappear from the representations. The relationship to the norm shows the primacy of objectives that trigger further actions and mechanisms aimed at conforming to these objectives. The space is not limited to the construction site, but rather extends centrifugally to acknowledge the organizational ("corporation" and "subsidiaries"), the hierarchical ("staff", "director" and "foreman"), expertise ("functions" and "safety officers") and value-chain ("contracting owners" and "master owners") dimensions of the firm:

> January 8th, 1987: *"The client may have to include in any contract with potential contractors a clause asking for the constitution of a health and safety inter-enterprise college. This body must include representatives of contractors, entrepreneurs and subcontractors."*

March 9th, 2007: *"We need to apply basic principles: the respect of rules, right technical solutions, training inside the company every semester and the systematic reception of newcomers on the building sites, especially the temporary workers and subcontractors' employees."*

The second new feature stems from the first: as the disciplinary apparatuses need to be exerted over a now relatively open space, it becomes impossible to have boundless control over every detail. For this reason, discipline is no longer exerted in a "command and control" manner but rather relies on norm internalization. The series of words – "training", "internship", "explain", "animation", "to get trained", "behaviour", "reward" and "information" – illustrates the fact that the norm is not imposed on actors in an openly coercive manner, but rather is explained and taught:

June 7th, 1997: *"Safety on building sites is also and before all an issue to be dealt by the staff. A good organization, a good risk management are musts. They are closely linked to the enterprise's quality certification policy. (…) Other trainings targeting the staff are frequently implemented. At GTM, this training is handed out by the quality and prevention director. It includes an initiation to statistics of occupational injuries, a training for the accident report, the way to build a safety policy."*

December 10th, 2007: *"Michel Castest, agency manager at Villeneuve-sur-Lot for SOGEA performs a safety audit every month. (…) To date, his safety challenge trophy used to reward the agency that was showing the lowest frequency rate. Today we want to emphasize best practices and have a report on almost-accidents."*

Lastly, the MANAGERIAL set of practices shows that the organizing of risk has become part of the enterprises' strategy. Indeed, it has been integrated into their organizational and rationalization processes. This evolution is visible in the series of words "objective", "quality", "zero accident", "policy", "organize", "improve" and "master". Enterprises do not aim merely to conform to laws, as would be the case in a juridico-legal apparatus, for instance. Rather, they set positive models that allow the deployment of various organizational processes:

March 9th, 2007: *"before, we used to set to ourselves objectives of frequency rates of accidents below 20. This meant authorizing accidents. We said no. It is about human respect, states F.X.*

Clédat, CEO of Spie Batignolles. Today, two out of three profit centres of Spie Battignoles have reached zero accident."

Our analysis of this last period shows once again the interdependence of distinct apparatuses. Since the 70s, the statistical data required by the State to develop mechanisms of security based on economic incentives were also used by construction companies to develop and implement programs of safety management. However, these programs have not necessarily taken the form of apparatuses of security mirroring the model of incentives developed by the Sate. The development of an accountancy of accidents rather favored the emergence of disciplinary devices applying to the whole domain of influence of companies. While the State and the professions were playing a key role in the articulation of the dominant apparatuses at work during the previous period, we can notice here that private corporations now play this role.

To sum up our results, we have identified over the last century three periods as displaying distinct sets of practices in the domain of workplace accidents. Interestingly, each of these sets of practices combines various apparatuses in an original way. Table 2 summarizes the modes of articulation we were able to observe on these three periods and the actors found instrumental in supporting the specific articulations of their constitutive apparatuses. It is now time for discussing the implications of such results.

Insert Table 2 about here

Discussion and conclusion

Our findings have a twofold implication for management and organization research. We first draw on the results of our study to reflect on the articulations between distinct apparatuses of government within complex augmented forms of power. We then discuss the implications of our study for critical management scholarship, calling for a more holistic approach of domination.

Multiplying power: from zero to positive-sum games

Our study confirms the importance of so-called apparatuses of security in modern and late modern settings (Munro, 2012). Indeed, each of the three periods that we identified so as to

contrast the succession of regimes dealing with the government of workplace accidents reveals the presence of an apparatus of security, an outcome which comforts the need for more systematically addressing the research challenges set by these particular forms of power, as is growingly recognized by the stream of thought which dedicates its work to Foucauldian post-disciplinary studies. But, more importantly, attention must be drawn to the concomitance of apparatuses of security with other types of apparatuses and to the interrelations between these that a closer inquiry reveals. Indeed, our starting point was to be found in the puzzle featured by the persistence and even extension of traditional forms of control in the face of the development of intelligent ones (Courpasson, 2000; Courpasson and Reed, 2004). How could the growing importance of the latter have not come to progressively consign the former to organizational history?

An explanation to this paradoxical outcome can actually start being formulated once one reveals the links that articulate both forms of power. Our data indeed shows that, within the second and third periods under study, disciplinary and security apparatuses have been working hand in hand. Just after WWII, public insurance took precedence, and a stream of professional expertise on risk was developed. Interestingly, this is precisely the implementation of this apparatus of security that also nurtured further disciplinary apparatuses, namely strict control over detailed technical processes on building sites that are supported by public bodies such as the inspectorate. The same evidence can be found in the last three decades, with the concomitant rise of accounting and managerial sets of practices. During this period, the systematic relationship between economic costs and types of injuries creates a market for workplace accidents. These new "economic laws" governing workplace accidents have directly encouraged the rise of new disciplinary techniques, with private enterprises led to develop their own surveillance and control mechanisms over a vast array of stakeholders. To effectively address the broader space they now target, some of the techniques at work are certainly more subtle than those observed during previous periods, as rightly captured through the concept of soft bureaucracy (Courpasson, 2000). They nonetheless remain fully-fledged disciplinary techniques, *i.e.* techniques that address the adoption of appropriate behaviours, and the new means they engage in, such as training and communication, are before all mobilized for facilitating the internalization of discipline.

In view of this, it becomes clear that power games are actually no zero-sum games. While one may intuitively conceive of the development of new forms of control as being mechanically

accompanied by a decline of those that had so far been prevalent, our study shows that the development of new forms of control can on the contrary revive already existing ones and even multiply the modalities along which they manifest themselves as well as broaden their scope of intervention. Mechanisms of power, although of different nature such as in the case of disciplinary and security apparatuses, far from competing one against the other for prevalence, can instead articulate in ways that arouse and reinforce each other. This result provides an explanation for the puzzle presented in introduction to the present study. And rather than looking at how intelligent forms of power are likely to displace their traditional counterparts (Adler and Obstfeld, 2007; Adler and Chen, 2011; Boltanski and Chiapello, 2005), it points to the need for looking at how the latter may proliferate as a consequence of the former, in line with Foucault's seminal intuition that the development of new technologies of government is not sequential and that the newest forms of apparatuses of security that fit best with the liberal *Zeitgeist* are still intimately nested within former techniques (Foucault, 2002, 2009).

Contesting power: from isolated apparatuses to a holistic approach of domination

The second lesson that can be drawn from the present study relates to the way management studies deal with multiple levels of analysis. It has frequently been argued that organization as a level of analysis may prove inappropriate for grasping the actual hierarchies of power at work and thus misdirect critical scholars on their perilous journey toward emancipation (McKinlay, 2010; Miller and Rose, 2010). To paraphrase Knights (2002: 576–577), organizational research would take advantage of not limiting its scope of inquiry to the clear-cut boundaries of organizations but rather "focus[ing] on the principles and processes of organizing wherever it occurs". While we certainly adhere to this view, it is nonetheless one that must be implemented with caution. Indeed, the risk is present that such a take keeps the researcher away from the actuality of practices.

The materialization of this risk is made sharply visible in the seminal Foucauldian management studies from the London school of governmentality (e.g. Miller, 1986; Miller and O'Leary, 1987; Miller and Rose, 1990; Miller and Rose, 2008). Some researchers reproach them for focussing on the level of macro-programmes ("political rationalities" in the London governmentalists' own terms), consistently adopting the point of view of the state and the regulators rather than the one of the organizations or individuals that are actually targeted

by these programmes (Barratt, 2008; McKinlay et al., 2010; McKinlay and Pezet, 2010). By doing so, Miller, O'Leary and Rose would miss the reality of actual practices, those practices being in some cases either shielded from the diffusion of (as can be the case for very small companies) or overtly resisting to state programs. They would therefore miss Foucault's real objective by studying programs of governmentality rather than governmentalization, the latter understood as the processes by which practices come to diffuse at all levels of society (McKinlay et al., 2010; McKinlay and Pezet, 2010).

In the present study, our choice of a trade journal as main source of data aimed to mitigate such a risk and combine both levels of analysis. While maintaining visible the content and nature of the macro-programmes, in particular by giving a regular account of the evolution of the legislation (publications in the French Official Journal, case-low judgements, etc.) and a voice to politicians and main public bodies, the choice of *Le Moniteur* turned at the same time the focus on those who were targeted by the "political rationalities" that have aimed at governing the issue of workplace accidents over the 20th century. The journal does certainly not cover all categories of people affected by those programs of government, the voice of the workers being noticeably rare in the data we extracted, but most of them though, as testified by the details of the journal readership.

Then, while it is certainly important to make sure that the empirical material that is collected has sufficient breadth for covering both levels of programmes and practices, it is only a first step that does not say much about the way to analyse them in a consistent way. One extreme answer to this problem of articulation between actors of a different size is the one proposed by Actor-Network Theory, that is considering the world as flat and studying all associations among actors, whatever their size, as horizontal and symmetric in nature (Callon and Latour, 1981; Latour, 2005). This explicit rejection of levels of analysis, by foregoing the facilities offered by the reference to macro actors whose potency would already be taken for granted, has for it to constraint researchers to a finer analysis of the state of associations through which power is constructed and then maintained. Its main drawbacks are however to make scholarly work particularly tedious and in need for an endless re-enactment, thus delaying the moment for political engagement that it is supposed to arouse.

In view of these limitations, we here contend that levels of analysis are still relevant heuristic tools when power is at stake and domination to be denounced, at least as long as theoretical

devices that provide a systematic way of articulating these different levels get mobilized. This is precisely the case of Foucauldian apparatuses, whose spatial dimension points, in essence, to levels of analysis. In the example of workplace accidents, disciplinary forms of power indeed take place within the clear-cut boundaries of what our management field traditionally defines as organizations, and the security apparatuses which nourish them can only be grasped by bringing our attention to the societal level. These results thus bring a strong justification for contesting the relevance of studying any single apparatus in isolation from the other apparatuses it connects to. In our case, the managerial turn that, from the eighties, has progressively colonized the area of workplace accidents within private enterprises cannot be fully grasped without being related to the accounting mechanisms that had previously developed in the frame of the state and its public bodies and nourish it.

This has drastic consequences for organizational research and particularly its critical stance. Indeed, it signals that critiques that solely target the visible face of disciplinary-based domination within organizations run the risk of being ineffective when they fail to resituate the origination of such domination within the hidden face of broader security-based mechanisms. On the one side, the attention directed toward visible disciplinary power by critical scholarship may be misdirected when it fails to consider the hidden role that more novel forms of power play in supporting discipline. On the other side, post-disciplinary scholars may overlook the persistence of disciplinary practices, although these may even get reinforced as a consequence of their linkage to apparatuses of security.

Conclusion and avenues for future research

To summarize, our study has drawn on a historical approach in order to examine how various apparatuses combine into complex forms of power in the domain of workplace accidents in the French construction industry over the 20th century. In particular, we were interested in knowing the mechanisms by which disciplinary and security apparatuses come to nourish each other. Drawing on some articles extracted from the main trade journal in this industry, we first identified three periods in the government of workplace safety in the last century, each displaying a specific set of practices. We then identified for each of these sets of practices its underlying apparatuses by leveraging the analytical grid developed in relation to Foucault's late works. Finally, we turned to secondary data to specify, within each of our three periods, the idiosyncratic combination of apparatuses of government at work. By doing

so, we strived to go beyond the emerging stream of post-disciplinary studies in the field of management research by calling for a more holistic approach that would conjointly consider the effects of disciplinary and more novel apparatuses of security so as to gain a better position from which to resist and challenge the effects of current forms of domination.

Considering possible avenues for future research, valuable insights would certainly result from studies that would direct their attention to the joint influence of disciplinary and security apparatuses in domains of activities others than workplace accidents. Among others, domains such as healthcare, poverty alleviation or education, all areas in which, as in urbanism and sexuality (Foucault, 2002: 250–252), individualizing techniques targeting human bodies and collectivizing ones targeting entire populations are likely to interact, would constitute appropriate candidates. Back to the domain of workplace accidents, and in line with Foucauldian concerns, the concept of regime of truth could also be mobilized for understanding how truthful knowledge comes to be produced when it comes to the notion of risk (Lambert and Pezet, 2011) and, in particular, how certain actors in this context may come to be invested with the power of speaking the truth.

Table 1: Lexemes related to the categories identified by ALCESTE and their categorization along Foucault's framework

	Judicial	State	Professions	Technical	Accounting	Managerial
Year	1907, 1927, 1937	1947, 1977	1957, 1967	1967	1977, 2007	1997, 2007
Space *People, places and environmental factors*	Court, Victim, Boss, Employee, Judge, Chamber/house, Workers, Inspectorate, Deputy	Committee, Regional chamber, Constituency, Board, Territory, Minister, Inter-firm, Subcontractors, Inspectorate, Prime contractor	International, National, Federation, Dr, Doctor, President, Country, Institute, Symposium, Congress, Event, Associations, OPPBTP [the French national body that delivers information and training on safety issues], Offices, Experts	Tools, Wells, Foundations, Individual, Men, Building, Surface, Firemen, Squad, Laboratory, Crane, Vehicles, Equipment	CRAM [Local Health Insurance Fund], CPAM [Primary Health Insurance Fund], Headcount, Employees	Coordinator, Centre Pierre Caloni, Trainee, Enterprise, Managers, Building site ASE, Spie [a French company], Colas-Bouygues [a French company], Subsidiary, Director, Works foreman, Journeyman, OPPBTP, Artisan, Client, Partner, Contractor, Functions
Event *Descriptions of the accident*	Offence, Inexcusable conduct, Misdemeanour, Violation of the right, Victim	*Undescribed*	*Undescribed*	Collapse, Falls, Explosion, Rupture	Death, Temporary inability, Permanent inability, Fatal accident, Accident, AT [Occupational Injury], Serious accident	*Undescribed*
Norm *Mechanisms and actions that influence behaviour*	Responsibility, Law, Bill, Case law, Act, Code, Procedure, Texts, Article, Judgement	Prevention, Decree, Bylaw, Measure, Regulatory, Recommendation, Application, Disposition, Conform, Approval test, Coordinate, Adopt, Institutional change	Publication, Professional, Prevention, Investigation, Science, Propaganda, Communication, Report, Treaty	Protection, Rescue, Precaution, Shore up, Excavate, Install, Insulate	Rate, Compute, Cost, Expenses, Amounts, Compensate, Addition, Number, Count, Figure, Decrease, Pension, Tables, Contribute, Identify, Report, Map out, Increase	Training, Internship, Safety, Explain, Animation, Objective, Quality, Zero accident, Prevention, Policy, To get trained, Risk, Behaviour, Improve, Organize, Reward, Master, Information, Chart, Movie

Table 2: Modes of articulation between distinct apparatuses

	Type of articulation between apparatuses	Actors who support the articulation
Period 1	Complementarity between a juridico-legal apparatus and an apparatus of security, which each reign on different and well-defined spaces	Lawmakers Lawyers
Period 2	Self-reinforcement between a disciplinary apparatus and an apparatus of security, which nourish each other	State Professions
Period 3	An apparatus of security feeding disciplinary apparatuses which strive to extend centrifugally	Private enterprises

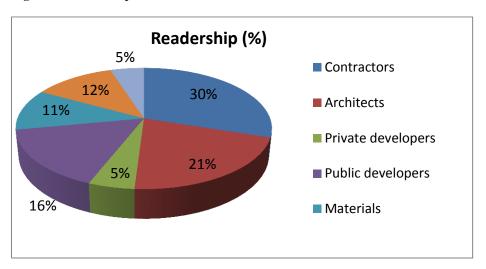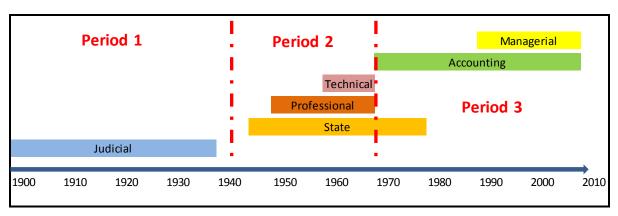**Figure 1: Readership of 'Le Moniteur des Travaux Publics et du Bâtiment'**

Figure 2: The evolution of sets of practices over the century

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