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The governance of animal and crop emergent diseases in agriculture: towards a shift in Biopolitics?
Results from comparative studies.

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The governance of animal and crop emergent diseases in agriculture: towards a shift in Biopolitics? Results from comparative studies.

Abstract

The rationalization of farming practices until the last barrel of oil has certainly reached new areas of biopolitics in the past twenty years. As social scientists, we are the witnesses of a conflagration between the hardening of biopolitical governance after the 9/11 events on one side and the progressive extension of the governance of various bio-risks, GM biotechnology and emergent diseases or new threats of invasive species in crop production.

When Michel Foucault introduced the notion of 'biopower' to account for the capacity of a sovereign state to achieve security of populations, he was describing the fact that biological life – and thus human life- had become a category and a matter of politics. Today, one can argue that the notion of biopower itself has to be re-problematized since the co-production of science and social order seems to have reach new frontiers with issues of global change and sustainability. In fact, the hybridicity of what has to be considered as biosecurity is more and more acknowledged as a matter of controversies about the boundaries of politics themselves. In that context, it seems relevant to adopt a much more performative conception of biopolitics where practitioners, regulators, stakeholders, activist make no mystery about the fact that they are making history in a state of vulnerability.

The purpose of this communication is thus to explore the theoretical possibility of such a change in governmentality regime Drawing on Science Studies and Rural Sociology Studies I propose a comparative analysis of the socio-political dimension of animal and crop diseases based on a reflection on the concept of 'dispositif' of emergent diseases. I propose to consider how actors who watch and manage emergent disease deal with the co-evolutive nature of biological and socio-political phenomena, and to show how, working within the framework of emergence, they contribute to reframe the relations between Science and Power while questioning the "dispositif" of biosecurity.

Introduction

The rationalization of practices right down to the last barrel of oil has certainly reached new areas of biopolitics within the last twenty years of what, after Ulrich Beck, is called a “Risk Society”. Not only are matters of knowing rationalized, the procedures of knowledge production are as well, especially when innovation – as an outcome and a process – becomes central to the definition of advanced modernity. In this context we, as social scientists, are the witnesses and, to some extent, the co-authors of a clash between the hardening of the governance of many types of practices, on the one hand (meaning, the ways in which people should be acting in delimited areas of their lives and especially in the workplace), and the progressive extension of the governance of practising dispositifs, (meaning the effectiveness of designers’ and users’ reflexive consciousness of the conditions and effects of apparatus of power relations). In this situation, the growing reference to governmentalization and to Foucault’s works is understandable (Clegg, 1989).

In the kind of research I am doing in the agricultural, rural area and food sector¹, Empirical researches on this domain are based on situations, in which the mastery of biological life and management of human activities means the purposefully ordering of practices of agricultural development, rural and land management and which results from the concomitantly design and implementation of the apparatus of agricultural and rural policies. As established in Barbier et al. (2004) this represents a collection of issues for the development of rural sociology. These situations contain a high hybridicity of professional practices and relations with problems of organised action between various professions having the aim of rationalising problems of agricultural production, sanitary risk, sustainability, food labelling, etc. Very specific to this domain is this permanent effort of modernisation that exists in agricultural, rural and food sector and that has also its own national specificities according to the variety of institutional framework, referential of public policy and the position of farmers in society. The design, the implementation and the evaluation of settings aiming at changing farming activities show signs of changes in the governmentalisation of farming and rural activities. The study of dispositifs in this particular context represents thus a relevant area of development for rural studies (Barbier et al., 2004) and in this communication we will focus on problems of governance of emergence of diseases and threats.

In the French context, professions like farm advisors or R&D engineers have emerged and been institutionalised precisely to rationalise practice of farmers, thanks to specific management settings mixing neo-corporatist and bureaucratic values (Muller, 1984; Lemery, 1991) and to a large economical transformation resulting from the industrialisation of food sector (Allaire and Boyer, 1996). Within the environmental turn, a lot of settings of public

¹ For more than 10 years, we had developed longitudinal case-study research with the idea to understand how collective risks become manageable: on air pollution in the city of Lyon, on water-protection paying attention to the role of settings in innovation process (Barbier, 1994) and to the role of researchers in those situation (Barbier, Lemery, Chia, 1999), later on the BSE crisis, paying attention to epidemiosurveillance networks (Barbier, 2001) and expertise committee (Barbier, 2003) as management setting of sanitary public policy. At present we are working on co-existence of GMO crops and non-GMO crops, and on management of quarantined pathogens.

management in agriculture, land and environment have been designed to implement of enforce new regulations about 'nature protection' for which the referential of ideas and objects is not completely stabilised (Mormont, 1996; Lascoumes, 1996; Murdoch, 1999; Lowe, Buller and Ward, 2002)). In many case-studies of rural sociology, it appears that skills are matter of professional identity definition and technological creation is a matter of political struggle within the actor-networks of innovation. More recently the big European food crisis of the 90's following the emergence of BSE has completely redefining the context and content of policy-making with a globalization of risk assessment and management (Barbier and Joly, 2001). At last but not the least the idea of modernisation is itself questioned through public controversies about biotechnology. Thus, apparatus of biosecurity and the purpose of biosecurity itself became a matter of controversies.

Like many of my colleagues at present, I will first revert to this underlying notion of 'dispositif' in order to frame the problematic of this paper – the aim of which is to discuss the waltz between the expected practices of actors, as rationalized in the definition of the apparatus of biopower, and their actual practicing when confronted with the implementation of that apparatus.

In the second section I will defend the idea that there are some interesting organizational phenomena currently occurring in the organizational features and arrangements in which biopolitics are at stake. I will present one of those fields of inquiry in which, with colleagues and students, I undertook my empirical work: the dispositif of innovation and management of biosecurity in agriculture. This general presentation will be highlighted by two case studies which will explore the phenomenon expressing this waltz between the expected practices of actors, as rationalized in the definition of the apparatus of biosecurity, and their actual practising when confronted with the implementation of that apparatus: scientific expertise to assess risks of agro-terrorism (Case 1); and the flimsiness of the French epidemiological surveillance network of BSE before 2000 (Case 2). This detour on the land of Science Studies and the sociology of inter-organizational relations in agriculture highlights what is tightly encapsulated in organizational life. I assume that an explanation of the confinement of organizational studies in the matters of surveillance and control can be found here.

In light of these two empirical approaches in terms of dispositif, I will then try to account for, and somehow to caricature, the place and characteristics of the treatment of the technology of power-relations within the sociological literature about power relations and organization. Whereas the issue of surveillance and control of workplace activities is well documented and is a subject of epistemological discussion about the role of management knowledge, the technology of power has received little attention in terms of governmentality. In Barbier (2003), I already proposed a critical review of this aspect in the French management studies literature, and underlined a certain lack of theorizing of "management settings" with a practice-based approach². The claim here is not only that the study of management settings

² I should mention here Moisdon (1997; 2005) and the more recent development in France of a sociological perspective on management (*sociologie de la gestion*); see Maugeri (2001); Boussard et Maugeri (2003). I could also mention

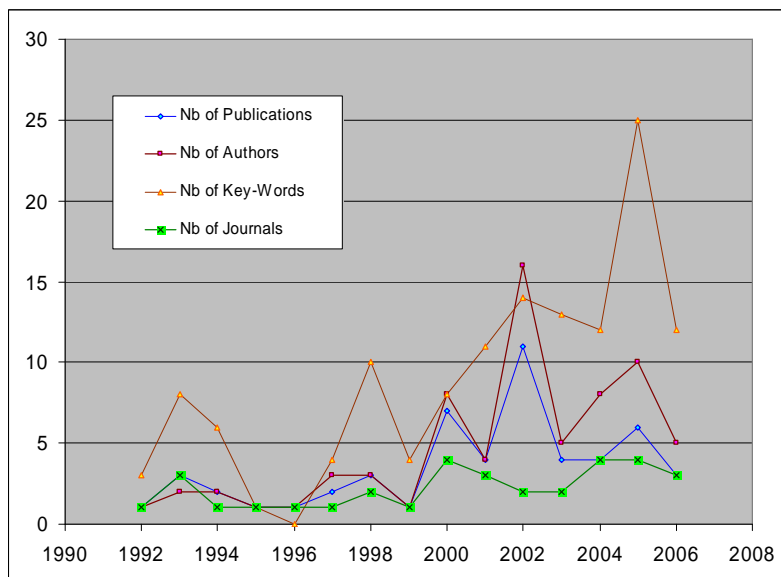
should be more systematic, but also that it should be accompanied by a theoretical and methodological purpose about what is related to those settings and how the practising of management settings is producing organizing and organization at the upper levels of organisation.

1. Discussing Foucault's notion of dispositif

1.1. *Dispositif* in the wild

The concept of *dispositif* in the works of Michel Foucault is currently receiving greater attention in various literatures of the Social and Human Sciences (SHS), since it deals with the materiality of governmentality. Surprisingly, however, this concept has not been a matter of much discussion within the organization studies literature (Rouwlinson & Carter, 2002; Townley, 2002; Starkey & Hatchuel, 2002), despite the Foucault effect in SHS, as described in the following graph (see Graph 1)³.

Graph 1: The “Foucault effect” – Evolution of occurrences of terms within the fields of a SSCI corpus (TS = “Foucault”)



Note that this notion is difficult to translate (setting, apparatus, machinery and device, etc.) are all weak candidates), which is why I prefer to keep the French version, *dispositif*. This does not however close the theoretical and methodological debate that this concept still triggers for social research and its theorizing. For the last seven years at least, we have seen the multiplication of uses of the term *dispositif*. Of course, in any intellectual production

various sociological and anthropological perspectives on *dispositifs*; see *Hermes* 25 (1999) and *Terrains et Travaux* (2006).

³ The impact in 2002 was basically due to the publication of a special issue of *Organization*, at the same time more or less as a colloquium was taking place in Paris at the Ecole des Mines, “Organiser après Foucault”. 12-13 December 2002, Ecole des Mines de Paris.

paying attention to power relations or governance, the reference to Michel Foucault has become a must”, and the availability of Foucault’s works – with the publication of his lectures at the College de France and with the four volumes of *Dits et Ecrits* – is certainly a reason for that.

But as a free word, *dispositif* is also mobilized more and more within different types of social worlds. Engineers, defence strategists, politicians and public decision-makers abundantly use it to describe mechanical agencies from which they expect an organizational course of human action with specific and delimited outcomes. Significantly, the Latourian principle of free associations of human and non-humans, and their equivalence in the production of a global effect, is at the heart of the use of *dispositif*. But of course these authors have not read Bruno Latour – and anyway, should they? The word also has a particular meaning in public policy-making, and is frequently seen in political texts as well as laws and regulations. In this context the use of the word is meant to assert the performance of the policy through the existence of the *dispositif*. Therefore the design of *dispositifs* is becoming an Art of governmentality to save, kill, teach, protect, etc., but an Art which exists in relation to bounds of knowledge. Symmetrically (*lato sensu*), a large number of critics and intellectual claims of resistance or sub-politics are also referring to the notion of *dispositif*, either to stigmatize the effects of a particular *dispositif* or to rationalize the struggle in a reference to Michel Foucault. Some civic struggles, acts of disobedience or even subversive aesthetic performance use the term to legitimate provocative courses of action in favour of particular identities⁴.

1.2. Grappling with definitions

But let’s come back to the textual Foucault. Quite implicitly, he started to express his view on *dispositif* with the publication of *Surveiller et punir* in 1975. As regards this publication, he defines in Foucault (1994: 299) the notion of *dispositif* at the junction of descriptive purpose (what a *dispositif* IS) (“a resolutely heterogeneous set of discourses, institutions, architectural layouts, norms, rights, regulations, scientific utterances, morals, philanthropy”) and a methodological purpose (what a *dispositif* SAYS) (“in the purpose to establish a network inbetween all these elements”). Deleuze’s reading of Foucault’s works is particularly illuminating (Deleuze, 1989), presenting him as a cartographer and going beyond this first practical definition of *dispositif*. He also insisted on the fact that this notion represented a style of doing research: “to disentangle the lines of a *dispositif*, in each case, is to establish a map, to draw a map, to pace unknown lands, and this is what he called field work” (Deleuze, 1989: 185). Far from being only and en dernière instance (in the final instance) an apparatus of

⁴ For example, the term ‘*dispositif*’ is much used in choreography or theatre (“*dispositif chorégraphique*” ou “*dispositif scénique*”). Very similarly to an engineer or a General, the use of the term means that the setting of a specific arrangement of things and actors also contains the spontaneous aesthetics of the audience and associates the emotion of the audience to the piece of Art created. It is important to note how much back-office activities and discussions are needed for such performances. In terms of looking at practices of ‘*dispositif*’-making, engineering public order or engineering aesthetical subversive emotion are very similar.

disciplinary power, a *dispositif* also exists through its enactment, that is, through a net of heterogeneous practices towards which it tends to exist. The scheme of the Panopticon (Foucault, 1975: 242) expresses this conception, though his first field works were dedicated to disciplinary apparatus: “the Panopticon plays a role of amplification: if it establishes power, if it can make it more efficient, it is not for the power itself, neither for the safety of a threatened society: the purpose is to strengthen the social forces”.

In this perspective, it is as necessary to work on disciplines of power as on the subjectivation of apparatus and technology of power-relations that are proposed or imposed by a sovereign or legitimate centre. This is what M.Foucault recently confirmed when he said that “the ‘*dispositif*’ is essentially of a strategic nature; it follows that it deals with a certain tampering with power-struggles, with a rational and concerted intervention within those power-struggles, either to develop them in a specific direction, or to block them, or else to stabilize them and to use them. The ‘*dispositif*’, thus, is always encapsulated in relations of power, but it is also always linked to one or more knowledge bounds that sprang from It, but that also empower its creation” (Dits et écrits, Volume III, p. 299 sq., our translation). This what I call a perspective in terms of *dispositif*, designed to keep labelling the empirical part of the research process with words such as apparatus or technology of power-relations. This perspective leads us to study apparatus as a performative agency of actors, rules and instruments, and to consider thus that such apparatus are fundamentally incomplete, using the topic developed by Simondon (1958) about technical objects and by Orlikowski (1992) about technology.

1.3. Are *dispositifs* everywhere?

Since the nature of the *dispositif* is to be strategic, it is not everywhere⁵. Only God or a Big Leviathan has an isotropic strategy for every place and time! It is in the nature of the *dispositif* to be situated, otherwise the planet would be a Panopticon or a set of Panopticons with no space in between. In this confusion, I see an old Kantian and romantic misconception of the social dimension of human life, based on a very simple positivism which consists in thinking that the map is the territory; in other words, we do not know (yet?) that we are only living in the world that the social philosophy of society describes. This is not to say that we are not under surveillance in airports or in London’s streets, that we are not manipulated by the media, or that the conception of any kind of daily tool is not a prescription of uses; but it is to say that all those situations of control, communication and innovation are matters of inquiry to explore the practices of shaping control, communication, management, etc., and

⁵ I have in mind here the recent definition by Agamben (2007): « *En donnant une généralité encore plus grande à la classe déjà très vaste des dispositifs de Foucault, j’appelle dispositif tout ce qui a, d’une manière ou d’une autre, la capacité de capturer, d’orienter, de déterminer, d’intercepter, de modeler, de contrôler et d’assurer les gestes, les conduites, les opinions et les discours des êtres vivants. Pas seulement les prisons donc, les asiles, le panoptikon, les écoles, la confession, les usines, les disciplines, les mesures juridiques, dont l’articulation avec le pouvoir est en un sens évidente, mais aussi le stylo, l’écriture, la littérature, la philosophie, l’agriculture, la cigarette, la navigation, les ordinateurs, les téléphones portables et, pourquoi pas, le langage lui-même, peut-être le plus ancien dispositif dans lequel, plusieurs milliers d’années déjà, un primate, probablement incapable de se rendre compte des conséquences qui l’attendaient, eut l’inconscience de se faire prendre.* »

symmetrically to investigate the practices within and around the set-ups that materialize control, communication, management, etc. For this purpose, practice-based approaches are particularly compatible with the *dispositif* perspective, as are ANT and activity theory (Fox, 2000).

This means that we need to account not only for translation or obedience but also for the subjectivation process (resistance, learning, by-passing, trans-coding and the like). I see this as a collective objective for us, as researchers or scientists, that is, to create the constructed reality of the social *hic et nunc*, meaning first of all to pay attention to the subjectivation process that ground *dispositif* in a human collective experience. Thus, I radically think that we shall not start again with the idea that the *dispositif* is everywhere; this intellectual trick consisting in raising the Leviathan to legitimate the struggle is a story for teenagers. We have more difficult and interesting things to do with power struggles and, more specifically as scientists, with the knowledge bounds and problem of the extension of our own positivities. This leads me to consider as particularly relevant all organizational phenomena which are taking place in arrangements where biopolitics are at stake. I will now present the field of inquiry in which I “draw my maps”: the *dispositifs* of innovation and management of biosecurity in agriculture. I try systematically to explore the phenomenon expressing a generative waltz between the expected practices as rationalized in the definition of apparatus of biosecurity, and the practising of actors when confronted with the implementation of that apparatus.

2. Organizational arrangements of biosecurity

2.1. Some considerations about biopolitics

When Michel Foucault introduced the notion of biopower to account for the capacity of a sovereign state to ensure the security of its population (meaning expansion of techniques, of apparatus and of discourses), he was describing the fact that biological life – and thus human life – had become a category and a matter of politics, and opened what he called a long process of governmentalization of the state. The discussion of the thesis of “pastoral power” flourished during the 1990s. Rose (2001) has highlighted particularly well the three dimensions of the recent development of the life sciences and the extension of innovation, taking the mastery of the bios as a prospect of profitability or security: the logic of control and surveillance; the logic of knowledge-production in the life sciences⁶; and the logic of the technology of the self. He announces the necessity to analyse how human beings have become “somatic individuals”, because of relations directly established between their biology and their behaviour. What we would like to examine in our case studies concerns these relations, although more specifically than in Rose’s work.

⁶ We prefer this notion of “regime of knowledge-production” taken from historians, and the notion of “regime of truth”, which tends to isolate scientific knowledge from other types of knowledge that also take part in the production of truth.

When one takes biomedicine and biotechnology as a matter of inquiry into resistance to biopower, the issue of what scientists, researchers or clinicians do to the human bios is directly questioned in terms of social control, knowledge and ethics. In our paper we address the same kind of perspectives but with human beings taking care of non-human biological life, with effects on human life: agriculture. Thus, the old relationship between culture and nature is today at stakes since many practices in farming, agricultural R&D and life sciences affect the human bios indirectly. This is evident in the proliferation of discourse and surveillance systems relative to threats on various forms of biological life that affect the human bios in the end. The hybridicity of what has to be considered to build up biosecurity is more and more often acknowledged as a matter of controversies about designing policies and being in politics with natural beings, human beings included. The biological is even at odds with the expectations raised by innovations in biotechnology, biomedicine and nanotechnologies, for instance.

Thus, the notion of biopower itself has to be re-problematized (see also Lazzarato, 2000) since the co-production of science and social order seems to have reached new frontiers with issues of global change and sustainability. Not only the integration of biological life into politics matters; beyond that, the contestation and moreover the contestability (either legitimized or in civil disobedience) of this integration has become a public problem to design policies and to be in politics with bio-risks, threats, diseases, etc. This integration may define governmentality in a much more performative conception of biopolitics, where practitioners, regulators, stakeholders and activists do not conceal the fact that they are making history in a state of vulnerability and that irreversibility follows from decisions or non-decisions. Governmentality is certainly also starting to be driven as much by pastoral power as by what could be labelled pastoral resistance.

The purpose of the following two case-studies is thus to explore the theoretical possibility of such a shift within biopolitics. The high numbers of issues of biopolitics raised by the rationalization process and endless modernization of agriculture and food security or the sustainable management of rural/natural spaces certainly address a respectable set of scientific challenges.

2.2. Case study 1: The practising of expertise to assess the risks of agro-terrorism

2.2.1. Presentation of the case

The first case study that I would like to interpret after empirical work deals with the practising of collective scientific expertise with the aim of assessing the risk of agro-terrorism for the European Commission⁷. Taking part in this project, I had the opportunity to follow up

⁷ These activities were undertaken thanks to the support of a European project symptomatically called CRIOBOTERROR (see cordis DB at <http://cordis.europa.eu/>) in which we decided to take part in order to have access to a full and productive participatory observation (Suffert et al. 2007). This project is mentored by colleagues from the USA and Israel, who have already had the “opportunity” to reflect on and design responses to agro-terrorism.

the project and to be a participant observer within the French group of scientists and during the meeting⁸. In this paper I focus on the practising of scientific expertise activities in the light of previous work about expertise and decision-making in Prion-related diseases (Barbier and Granjou, 2003; 2005). I thus intend to consider how scientific experts deal with the ill-structured nature of the problem of delivering a scientific opinion about bioterrorist actions, using specific existing knowledge and frames when such action is unknown to them, or only poorly reported in the scientific literature as real events, though narratives of biological warfare are well-known to them.

Table 1. The context of the practices that are observed

Plant pests and pathogens are responsible for a large number of diseases in crops and forests¹ with economic and social significance. Several of those pests are currently a threat to food security and the agri-industry. Most pest outbreaks have, so to speak, “natural causes” or are triggered inadvertently by the introduction of human activities. Before the big event of 11 September 2001, the risk of a deliberate human introduction of a pest for opportunistic reasons – referred to nowadays in official discourse as “agro-terrorism” – had already been mentioned in some specific situations. But in all Western countries potentially threatened by terrorism and therefore in European countries (UK included), concerns about agro-terrorist threats have increased over the last five years and the necessity to rationalize those threats has been put on the political agenda. A community of scientists and experts concerned by bio-terrorism and crop protection has emerged in the US (Whitby, 2002; Madden and Wheelis, 2003). As proposed by Suffert (2002), crop bio-terrorism is certainly an emergent issue for agronomic research and more particularly for pest epidemiology. Suffert et al. (2007) have therefore proposed a broad definition of agro-terrorism, as “*the intentional use (as well as the threat or simulation of use) of plant pathogens (fungi, bacteria, viruses) by any human agent in order to cause direct damage to crops or forests or to indirectly affect the agricultural sector*”. Within a European Concerted Action (Gullino, 2005), a few European crop scientists involved in plant protection research are currently developing new scientific activities related to the assessment and improvement of crop bio-security (Latxague et al., 2007; Suffert et al., 2005) in order to propose methodological responses with the view of addressing the threat of plant pathogens as weapons against crops.

The main objectives of this project are (a) to produce a common methodology to assess the risk posed to European agriculture by new pathogens introduced in agro-terrorist attacks; (b) to prevent the damage caused by the deliberate and accidental introduction of new pathogens and (c) to eradicate or contain newly-introduced plant pathogens. As in many European projects, the simple fact that coordinated activities are taking place is considered as a result. In the case of this particular project, the purpose is to establish a network of laboratories able to provide resources and competencies for a quick diagnosis of new pathogens and to study their biology and epidemiology. The activities of experts in this project have mainly dealt with the establishment of a list of “bad” pathogens which can be considered as high-risk for European crops, as well as a list of the most vulnerable crops, and the proposal of a risk-assessment methodology for the emergence of epidemics after accidents or catastrophes. Some

⁸ I have some agronomic background and derive a certain legitimacy from it in this group, but I am not taking part directly in the expertise activities dealing with plant pathogens. My job is much more to propose some feedback on what is involved in the practising of expertise, and to enhance reflexivity.

effective tools, such as protocols for inspectors for quarantine and phytosanitary controls, should also be provided.

The creation of the list of “bad” pathogens and the assessment of the risk of agro-terrorism are not only mobilizing ordinary scientific knowledge in plant pathology. I will not describe here the activities consisting in agreeing on a list of pests, while discussing the criteria; nor will I go into detail about the mobilization of the already existing framework of Pest Risk Analysis. While translating and adjusting stabilized knowledge and methodological data from a common crop protection perspective to a biosecurity perspective, some elements of different types of discourse are appearing in meetings, within the national working groups and during informal discussions.

2.2.2. Discourse of contextualization

All experts accept the normative purpose of their task and the need to develop a European network of competences and a kind of common framework to assess this kind of threat – a stance which is very new for most of them. The hybrid composition of the threat – in short: a “bad plant pathogen” plus a “terrorist using this pest” – is not that much a matter of discussion since all experts are, first of all, experts of pests and not of terrorists. Therefore in order to justify the object of their on-going asymmetric expertise activities, they tend to address two massive contextual discourses.

A discourse about the amplification and expansion of food scares born with the BSE crisis in Europe and its spreading around the world (Japan, Canada and USA) is related to the existence of previous massive pest outbreaks such as phyloxera in Europe or mildew in Ireland. Experts are conscious of practising their expertise in a new kind of regulation regime in food safety based on precaution, particularly with present threats of zoonosis like SRAS, although they do not directly mobilize tools or guidelines designed to enforce a specific way of doing expertise.

Secondly, they readily refer – and who would not – to the threatening event of “September 11th”. This reference to an event is punctuating a widely-shared narrative and set of emotions about the horrible consequences of such a major terrorist action consisting in bombing symbols and humans with hybrid human-technical bombs⁹. The use of this reference during shop-talk plays a very important role in closing local controversies about the way of tackling risks. It is also a very tricky reference since it sounds like a “last bullet argument”. The reference to these two discourses attempts to justify the purpose of on-going activities of expertise and in doing so it tends to frame a junction between a classical regime of scientific production in crop protection and an emergent regime of risk assessment in security.

The scientists I “observed” in this project also wonder whether the availability of the responses to agro-terrorism in scientific journals (and those produced by the project itself)

⁹ One has to recognize that the association of images, emotion and concern about the collapse of the Twin Towers has spread internationally, whereas the semi-destruction of the Pentagon has not. This asymmetry of representation of the symbolic dimension of this terrorist coordinated action has considerably blurred its significance.

might enhance the capacities of terrorism. The consequences and risks of mobilizing scientific knowledge and activities have been indicated almost as an ethical concern, not only because research facilities are vulnerable to attack, but also because they could constitute entry points for agro-terrorism, just as flight simulator software might have been used as a platform for training. This issue is creating a line of tension between participants of the CROPBIOTERROR project, and has generated debate about secrecy of expertise in this domain.

2.2.4. *The hybrid nature of the agro-terrorist threat*

Some preliminary results of four participant observations of the French group and two participations to the meetings of the project show that the definition of the concept of a threat is weak because it is hybrid. It is also quite paradoxical to see a combination of science-based discourse about plant pathogens and lay views about terrorists: who are they, why are they acting, what are their capacities and knowledge? Despite the attempt to frame a methodology based on scenarios of potential threats, this asymmetry of knowledge certainly remains a key dimension of their task, but is also a very significant fact for my own perspective. As far as the ill-structured nature of this problem for experts is concerned, what experts tend to realize in practice in order to assess risk and propose a framework to foster preparedness seems to be very close – in nature but not in purpose – to the rationalization of alleged terrorist practices consisting in knowing and learning how to mobilize pests towards specific targets. Paradoxically, expertise of prevention could be very close to that of an opportunistic action.

2.2.4. *Interpretation*

Let us now interpret these preliminary results in terms of dispositifs. One way of dealing with these preliminary results could be to develop a severe critique of the work undertaken by our “scientific colleagues”, in light of the stimulating critical studies of Weber (2005) about the militarization of thinking: whatever the reality of the target – are there actually any agro-terrorists threatening our crops? – the availability of a troop of crop scientists is an opportunity that has to be explored. The singularity of agro-terrorism, and perhaps its inexistence¹⁰, is creating an opportunity to establish an apparatus of expertise. A bound of scientific knowledge is taking part in this operation of rationalizing alleged threats; it is putting available knowledge into a frame for risk assessment and preparedness for the risk management of those threats.

My feeling as an insider in this project is that, beyond such a possible critique, this dispositif has to be understood in terms of practising. The co-ordination of scientists in this project is also a target of opportunity. Each time the rationale of the project is tackled in practice (How do we choose the “bad” pathogen? What is the human composition of the threat? Shall we keep it secret?), discussions arise and justifications proliferate in various types of discourse.

¹⁰ I could expand on this with a textual analysis of scientific production, showing that one of the main reported deliberate uses of pathogens for crop destruction is that of the “moderate” destruction of narco-traffic by armed forces.

Practising expertise is thus becoming a matter of knowing in practice; and at some particular moments my colleagues are entering into a waltz: two steps in expertise (one for food scares, one for “11th September”), one long step in crop sciences. Practice and practising at the individual level or in a community of practice is thus a punctualization of the *dispositif* in all senses, not only the technological aspect of the apparatus of expertise but also the reflexive discourses about expertise. What is at stake here is the maintenance and perhaps the preservation of this reflexive stance; and there we as social scientists have a role to play, humanistic in purpose, situated in practice, and sometimes requiring us to go to strange places.

2.3. Case study 2: Epidemio-surveillance in practices in France

2.3.1. *Introducing the case*

Our aim with this second case study is to propose an organizational study of the mode d’existence¹¹ of the epidemiological surveillance network for BSE (or BSE Network in this paper) since the institution of BSE as a European public problem has had the effect of naturalizing the existence of the epizooty and ironing out questions of producing BSE cases in practice. I will not describe the structure of this apparatus (see Barbier, 2001; 2006) which is very close to what I have just presented in Case 1. I will rather concentrate on the forms of subjectivation which are constituent of the existence of the BSE network as a technology of power-relations with supposedly a field of practices dedicated to the production of cases of infected cows. I will try to point out how much the robustness of this apparatus depends on those practices which belong to various social worlds and professions (farmers, field vets, slaughterhouse vets, public officers, researchers, journalists, and various intermediary bodies involved in agricultural politics)¹². Inspired by the work started by N.Dodier on the AIDS epidemic (Dodier, 2003), our sociological reading of the BSE Network is based on the results of two types of investigation. Some results are from a follow-up of the BSE saga with media outlets, bibliometric studies on scientific databases and interviews; others are from a specific investigation on the structuring and functioning of the BSE network, covering the whole range of actors involved but without geographical exhaustiveness. Before going to the heart of the inner mode d’existence of the BSE Network I will have to start with a presentation of the outcomes of this apparatus that trace the existence of BSE in France during the 1990s

¹¹ “Ways of being” is certainly a bad translation of this notion proposed by Simondon about technical objects. The reader is referred to a discussion of this notion to establish a practise-based approach of management setting, in Barbier (2003).

¹² This work rests on a set of empirical studies undertaken since 1998 on the “BSE saga” and, more particularly, on the question of expertise and the epidemio-surveillance of BSE; see Barbier (2001), Barbier (2004a); Barbier (2004b) and Barbier Granjou (2005).

2.3.2. The silence of the infected cows

When the first article concerning a new neurological bovine disease was published in 1987, few people in the French veterinary world were monitoring non-conventional transmissible agents (NCTA). At the beginning of 1989 the disease was apparently deemed to be of little interest. Then, late that year the whistle was blown in an article by J. Brugère-Picoux and J. Chatelain who envisaged the possibility of transmission to humans¹³. Within the OIE, representatives of member countries were alerted in early 1988 by the Veterinary Chief Officer of the MAFF. It was at the end of 1989 that a publication devoted to the French veterinary world defined the disease, describing it as a "slow viral disease", and reported the major animal health problem that the UK as well as the rest of Europe was facing.

In this context the Ministry of Agriculture's first step was to impose administrative sanctions on the importation of animal meals incriminated in epidemiological studies carried out on British breeding data. After this awareness of the gravity of the British situation, the idea of preparing to detect diseased animals in France led to the conception of a project to establish a national surveillance system associating the epidemio-surveillance network and the sanitary police. A network of actors from the CNEVA (Centre National d'Etudes Vétérinaires et Animales) and the DGAL (Direction Générale de l'Alimentation) subsequently set up the system. It was in the context of tension around this emerging disease, sometimes qualified as "exotic", that the Ministry of Agriculture created a sanitary police force. It also established administrative routines for the treatment of BSE as a contagious disease (Decree 90-6478), which it was not, but the Ministry was thus enabled to mobilize the arsenal of measures in the Rural Code for the eradication of contagious diseases (Articles 224 to 228). From then on, dealing with BSE at an administrative level became part of the sanitary police's mission assigned to the veterinary-inspectors of the DSV (Statute of 1984), and part of the sanitary mandate of veterinarians in the field. Thus, everything was set up, fairly rapidly, to structure vigilance and allow for a centralized monitoring to detect cases of BSE.

Yet it was not until the BAB epidemic in 1998 that the network started to detect a significant number of BSE cases in many areas of the country. The increase in the number of cases gradually became a "discourse machine" to evaluate the past effectiveness of the BSE surveillance network. This network thus had to face criticism regarding its robustness, and opposition to systematic culling in the breeding community suggested the possibility of under-reporting of cases. In March 2000 the data produced by the BSE network accentuated doubts as to its robustness, as the wave of NAIF cases contrasted sharply with that of the first cases infected by British animal meals. It also differed from the profile of the epidemic in Switzerland. In 1999 the reported rate of incidence quintupled when the epidemio-surveillance system was strengthened through testing on herds culled as a matter of emergency (cf. graphs below).

Concerning the first years of the BSE network, there had been six confirmed cases when the epidemiological status of BSE was at its climax in the UK, in June 1993. Outbreaks of the

¹³ "Encéphalopathie spongiforme bovine", *Bulletin de la Société vétérinaire. Pratique de France*, December 1989.

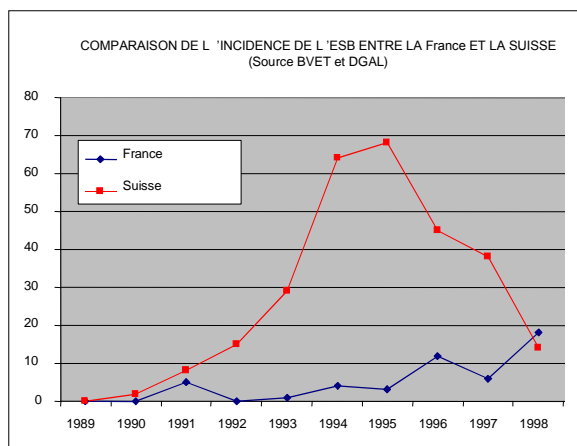
disease continued to be very sporadic. In May 1995, 12 cases were confirmed for 118 suspected clinical cases (see Graph 1). The chief vet in charge of the BSE Network even started to complain of a lack of acceptance of monitoring by farmers and a lack of motivation by vets. The awareness of an epidemic risk of BSE was not really shared by farmers and veterinarians, and BSE was not really considered by them as a prophylactic priority.

Graph 1

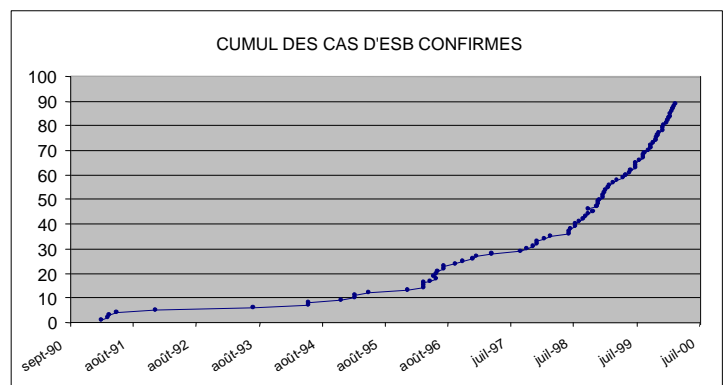
Year	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Nb. of Confirmed BSE cases	0	0	0	0	5	0	1	4	3	12	6

The low level of BSE prevalence in France at that time is still today a matter of discussion in order to understand how the number of BSE cases “Born after the Ban” (BAB Cases) of meat and bone meal (MBM) could be larger than that due to contamination with UK MBM in the early days. One hypothesis is that neurological sub-clinical signs were not necessarily taken into account within the BSE epidemio-surveillance network, so that animals were slaughtered before any detection. Another hypothesis is that the infection via MBM was not so important compared to the cross-contamination which occurred in French cattle after the ban of MBM – the cause of the BAB-case epizooty – for bovine, in 1990. The comparison of the results of the epidemio-surveillance networks of France and Switzerland clearly address the issue of the robustness of the French network (see Graph 2) since the Swiss veterinarian surveillance is known to be very efficient within the veterinarian community.

Graph 2.



Graph 3.



The epidemio-surveillance network provided evidence of this under-estimation of BSE prevalence in French cattle only in 1997, with the appraisal of the beginning of BAB case epizootics. In 1997 some bovines born after the ban of MBM started to be confirmed as being

infected with BSE. The number of those cases has seriously increased until today (see Graph 2 and 3). The epidemiological analyses that were carried out in 2000, based on the figures produced by the BSE Network, clearly established public proof of this under-estimation. More definitely, the use of systematic BSE tests since then clearly give an idea of this under-estimation. The question that I would like to raise now is: how is it possible for a technology of power to be designed with the view to protecting health (a real manifestation of pastoral power)? I will start with some consideration about the nature of this apparatus and will then present some sociological explanation for this fact.

The above graph 2 and 3 enables us to understand why many experts on the Inter-ministerial Committee on ESST were dubious about the real prevalence of the disease in France¹⁴. The establishment of active epidemio-surveillance, with the programme launched in June 2000, stemmed more-or-less directly from this reflection and France's policy regarding the lifting of the embargo on British beef. The Committee proposed an epidemiological research programme to increase the production of epidemiological data and to have a better idea of the prevalence of BSE, in addition to the precautionary attitude which characterized its approach. The first results delivered in December 2000 by the AFSSA reported "a probable shortcoming in reporting and recognition of cases by the clinical surveillance network". Hence, for the AFSSA experts it concerned either "weaknesses in the passive epidemio-surveillance system" or "intrinsic limits in the output of any passive epidemio-surveillance system". The main conclusion was that, in keeping with the results obtained in Switzerland, passive epidemio-surveillance "is on the whole insufficient to give a precise representation of the prevalence of the disease".

The French case, considered in relation to other countries similarly affected by BSE, shows that epidemio-surveillance measures are embedded in an empirical reality which relates to issues of veterinary coverage, incentives to report cases, awareness, etc. Moreover, it attests to a dependence of the reality of emergence on the quality of the actors' coordination. This is a crucial issue of trans-national structuring of surveillance systems and there is no certainty that universal uniform coverage is the best response. This is certainly a matter of debate.

2.3.3. The BSE Network as an apparatus

Epidemiology is defined today by the explicit use of the concept of risk, and by the mobilization of statistics to measure the outbreak of various diseases. In this respect, it relies on devices of the epidemiological surveillance network (ESN), which means mobilization of attention and skills, clinical detection, production and management of data, and analysis and communication on this data. To look more closely at this chain of knowledge production, means paying attention to the framing of early signals and to the various practices of rationalizing the existence of disease. Even though Amstermadska (2005) recently analysed the problematic demarcation of epidemiology as a scientific discipline, little attention has been

¹⁴ One of the members of the CIESST (the inter-ministerial committee on TSSE) undertook a mission to Switzerland in 1999.

paid to the monitoring and manufacturing of cases, despite the logistics and quality of chains of immutable objects being crucial. The assembly of practices that cause a case to exist is a momentum of distributed judgement on the reliability or the appropriateness of the apparatus which deliver information, as in the case in scientific laboratories (Collins, 1985). By objectifying a sanitary situation, epidemiological surveillance networks are taking part in the activities of the sanitary police, so that the confirmation of this existence of pathological cases triggers regulation and, in the case of BSE, the destruction of the infected cow and other animals in the herd. Vets' knowledge and administrative prerogatives are arranged together to institute a public response of the pastoral state which makes epidemiological surveillance almost indistinguishable from the exercise of the sanitary police's power, either for farmers or for the public.

The implementation of epidemiological surveillance in practice supposes then that actors agree to take part in a production of knowledge which might also mean the production of death. The declaration of a suspected case implies a chain of activities immediately ending with a diagnosis in the laboratory. On the economic side, the regulation defines the amount of the state's financial participation. This financial aspect is important insofar as the compensation for herds is an indispensable condition for the declaration of a suspected case and an incentive for field vets. Monitoring to cull and culling to produce public health: this is, in short, the aim of this apparatus. Like the two sides of the same coin, it basically associates the clinical network of epidemiological surveillance with the sanitary police in a context of precaution. The robustness of the ESN relies on the alignment of behaviours within the acceptance of producing cows' death to protect people's lives. This is what the existence of a BSE case contains in a table of figures of the International Office of Epizootics. But such figures also virtualize a large number of situations and not only the silence of the cows.

2.3.4. Interpretation

The establishment of a BSE case – and the almost identical repetition of this operation – is what characterizes the robustness of the network. It depends first of all on the knowledge and feasibility of procedures, defined without preliminary dialogue with all the actors of the network, since of the behaviours of farmers and vets were conventionally supposed to perform surveillance. But the robustness is not only the result of compliance with “good procedures”; it also depends on the addition of local rules of coordination at the level of the configuration, where detection is a practice at stake on the farm and in the lab. Cases of BSE can be diagnosed in two places: by a vet on the farm and at the slaughter-house when bovines enter the culling chain or when some of them come to be slaughtered for sanitary reasons. This proximity of death and life, clean and dirty, medicine and food, meat and waste makes slaughter-houses very particular places, as much from the point of view of risk management as that of the coexistence of opposites.

Without the surplus of collective conscience that detection is necessary to the achievement of safety, the BSE network might finally have been only very slightly embedded in the reality of

practices. Confessions about the by-passing of regulation are always difficult to obtain, although interviews with field vets point to this possibility. First of all, a suggested cause for under-declaration is farmers' denial of the disease, which had been announced from the early days of 1991 by authorities and veterinarian surgeons, as sporadic. Secondly, vets also declare that the differential clinical diagnosis of ESB was not easy since the disease was unknown. Thirdly, and this is much more a result of my interpretation, a causality of under-notification of BSE clinical signs is perhaps to be found in a learning process. When vets became aware that the differential diagnosis was not easy and that a notification of suspicion of BSE could put farmers in major difficulties and moreover would publicly designate them as bad professionals, I think that they notified suspected cases only when clinical signs were obvious, knowing that the ill cow could be culled in the sanitary part of the slaughter-house and therefore extracted from human food chain as well as the rendering chains. One of the vets interviewed clearly stated that the preservation of trust between farmers and vets was the main objective they had in mind during this period, precisely in order to avoid unnecessary culling and fraud in the meat chain.

These tensions from below about safety (at least between 1991 and 1998) define the existence of a cleavage between the reality of the practices of safety, and the safety that the BSE network was supposed to ensure by contributing to the monitoring of outbreaks. This might have led to a flat curve of the BSE case, confirming that France was not the UK, and that the disease was only sporadic. Because of the data delivered by the BSE Network, this epidemiological tale was consistent and was perhaps not even in favour of learning the practices of detection. Another level of explanation concerns the management of skills and training within the maintenance of the BSE Network. Some elements of our interviews address this issue. While the BSE Network makes it possible to build the data necessary to the evaluation of risks, it also tends to expose public administration to an evaluation of the efficiency of the enforcement of BSE regulations, and thus to come public and face the reality of a debate with farmers' representatives. The BSE Network appears then to be less than neutral. This is also how I interpret the silence of the Agricultural Administration during the year 1999 when it became clear that the epidemic was there and not sporadic. Lastly, the BSE Network, as a device built on a clinical and passive monitoring of clinical signs of BSE, was replaced in 2000 by active surveillance based on systematic BSE tests. It was a major change in the way BSE cases could be "manufactured"; and the evaluation of the first test campaign clearly indicated the high level of under-notification (around 16% of the animals found in sanitary culling systems had been detected positive).

The BSE Network appears to have malfunctioned in the proximal zone of several professional worlds. Two levels can be distinguished. At the level of relations between farmers and vets, a learning process might have worked, not to learn the steps of notification, despite it was supposed to be a pillar of the apparatus. This process of learning how to keep distance with the apparatus has maintained trust with the aim of managing safety more locally than within the official notification system. The second level is certainly more common for the management sciences, and consists in the fact that the BSE Network was huge and poorly

supported with resources and organizational aid for training and brain-storming. Note that this apparatus was loosely coupled with the political enforcement of regulations on BSE which, incidentally, had been on the agenda in terms of precaution only from March 1996. We know why, since the EU crisis started in 1998 with Ortega's report on European dysfunctions in the management of BSE risks.

My conclusion here will not address normative discourse about how it could have been better. What was at stake in this process has to be interpreted simply as the practising of practices that an apparatus wanted to be performed. My account aims far more at pointing out subjectivation processes than denouncing deviances. The interpretation that I propose here – without being able to demonstrate that there has been under-notification – consists in saying that the limits of the apparatus are inherent in its structure, on the one hand, and in public reference frameworks concerning its functioning, on the other. On the latter point, this apparatus was designed to confirm the existence of a sporadic disease, and the BSE Network really did succeed in this task but to the detriment of vigilance and precaution. As a conclusion, one can say that the life and death of this apparatus shows the flimsiness of this technology of power-relations which has been built in a certain a-perception of local knowledge and in a hypertrophy of the discourse of control of a disease that was said from the early days to be purely sporadic and British. Extensive analysis is still required to understand the complexity of the practices and forms of collective action that constituted the phenomenon of emergency. At this stage one might note that the vigilance implied by surveillance of emerging diseases is facing three paradoxical, intrinsic limits of apparatus of biopower:

- (1) the recycling of the alert in authoritarian control apparatus, which can prevent the signalling of an emergency and thus the prescription of public action;
- (2) the loss of signals in the range of possibilities and discourses on the reality (including scientific) of those signals;
- (3) the prophetic activity and esoteric treatment of events, which present vigilance as a phobia and disqualify it as an over-cautious attitude.

3. Discussion: text and context of precaution

3.1. Relativism or mode of existence

Each of these two case studies and some empirical work realised by Prete (2007) about crop protection towards “invasive species” enables an interpretive analysis of the differences between practices as expected and virtualized within the script of the technology of power (notably the compulsory reporting of cases of disease despite an immediate effect on business). The subjectivization of this apparatus is observable in the practising of the script, either by the end users, the targets, or by the designers themselves. This practice-based approach to the apparatus of biopolitics in agriculture offers the possibility of questioning the transformations of relations in between organisations, administration and professions studies in the new areas of biopolitics. This is what this section is about.

The studies of the configurations in which the emergence of BSE took place; or in which the future apparatus of biosecurity against agroterrorism are about to be framed, reveal the high level of involvement of administrative and political authorities in the construction of emergent disease or emergent hybrid threats. The correlative effect of this involvement results in the objectivization of other kind of practices, and especially farming practices. The efficiency of epidemiological surveillance, as the preparedness of European countries to hypothetical threat of agroterrorism, are thus linked to the legal and bureaucratic construction of the protection of the territory. The cognitive referential of public policy in which the emergence of disease or threats is conceived played an important role.

Apart from the possibility of socio-political and cultural variations on emergence, a more general feature of this possible new biopolitical regime –mentioned in the introduction – relates to the fact that the arena of the existence of evidence of a risk or threat is constituted in configurations which cannot be reduced to that of a laboratory or expertise in administration. Contrary to the anti-relativists' chanting, this plurality entails not a de-realization of that existence, but rather new conditions for the construction of evidence [14], by recognizing that the facts (both hard and soft) are in any case constructed before being published¹⁵. It means accepting that emergence is a construct; a construction in scientific activity, to be sure, but also a construction in multiple other worlds, all with their own social functioning. This property of emergence is not a relativist bias or a weakness of the desire for objectivism; it is a mode of existence. What the researchers concerned (social scientists included) also find highly intriguing is the importance of scientific activities in the creation of signals or, indirectly, in the way in which signals are treated by scientists.

3.2. A symmetrical approach to the effects of emergence

But the participation of scientists in the configurations of emergence does not happen in a republic of scientists cut off from the world. Situations of emergence are precisely open systems of relationships. They are therefore a source of complexity for scientists, as they call for an abrupt de-framing of the temporality of the laboratory's knowledge production and a reorientation towards an expertise of action with a political goal. For clinicians, emerging diseases imply a regime of emergency and action in situations of uncertainty. They are also sources of appearance in the media arena and therefore entail a confrontation with the public's normative expectations from Science – precisely at a time when, for scientists, emergence is exactly the moment for calling into question that which is known or unknown. Complexity and vulnerability thus challenge the ethos of scientists involved in situations where emergence is constructed as a phenomenon.

¹⁵ Relativism or no relativism? Do emerging diseases exist or is their emergence simply a social, political or media construct pasted over an objective reality hidden from the lay person? We are not sure that we want to accept such an alternative because the metaphysical and epistemological treatment of this question has become a practical issue of risk governance, and researchers are wondering about it as well! As regards emerging diseases, it seems that the problem today is not one of believing to exist but rather of existing to carry on believing.

But situations of emergence also represent a wonderful window of opportunity for the dynamics of a scientific field. The repercussions of emergence on the dynamics of scientific production itself are one of its most important components – the case of prion-related diseases being a prime example. Finally – although we cannot claim to have examined all the dimensions of this subject –, situations of emergence relate to the way in which responsibility is assumed in the face of risk. This is the case in situations of expertise currently marked by a pragmatics of precaution [15]. On this point, what that means in theory and practice is still open to discussion, despite a number of regulatory indications and many debates on scientific expertise.

One cannot over-emphasize the fact that this exercise of the precautionary act is not a principle of inaction; it is above all an act of knowledge to envisage the future of the pathological in light of a dissonance in the order of the normal. Practising the scientist's profession is probably still as complicated as it was in Pasteur's day, despite the advent of the scanning microscope. The study of the sociological mode of existence of emergences and re-emergences shows that this construction stems from the intertwining of the paradoxical dynamic of sciences and techniques (they create new objects but concomitantly with new risks), with the definition of new objects of law or of the judicialization of socio-technical controversies, and the constitution of new domains and instruments of public or civil action calling for more participation. For many researchers in the agricultural field, who see the overlapping waves of sustainable development and climate change (especially plant health) unfurling towards them, the problematic intertwining of humans' relationship with the mastery of life forms – and of humans' relationships with one another or with future generations on the subject of that mastery – is becoming a major professional challenge. This expected effect of climate change on the composition of life forms and on the policies that governments will implement, complicates even more the task of knowledge production expected from researchers. New arrangements need to be invented to improve the link between the production of academic knowledge, applied research, and the demand to engage in partnerships.

4. Conclusion: back to *dispositif*

Critical studies of management tools and settings emerged in the late 1990s with strong roots in the earliest studies of M.Foucault – those on relations between knowledge, power and discipline (Foucault, 1966; 1975) – and in a critique of the effects of today's capitalism upon daily life in the workplace. They have proposed a useful definition of managerial settings as a set-up of physical, human and symbolic elements, which have systemic interactions with one another in order to organize human activities, particularly in the workplace. (This definition has accompanied a set of sociological studies of workplaces and of collective action, which has revealed new management practices in today's –capitalism, e.g. call-centres or logistic chains). This perspective mobilizes a theory of disciplinary technologies of practices which clearly “works” in this kind of situation (Ledema, Rhodes, Scheeres, 2006).

Nevertheless, these critical studies might fail to consider all the aspects of organizational life and organizational learning, which are not based so clearly on disciplinary power but rather on something far more in-between and dialectical, even when surveillance at work is concerned (Sewell, 1999) i.e. on the one hand, governance of the self in emerging practices thanks to emerging objects in which the construction of the self (or of the person as a subject) prevailed over subjugation but also, on the other hand, the permanently-ongoing captures of self-governing practices (Moisdon, 2002) as a factor of self-organization. Even though this approach works for certain disciplinary management settings (in the sense that the will of the manager is fully activated in the practices of those who are managed), we are still puzzled as regards this approach when inter-objectivity of management tools or the un-accomplishment or rules or even identities of actants are at stake within the arena of workplaces. Moreover, when management settings are considered in-between organizations or in collective action driven by public management situations, the question “where is the capitalist” arises. This is where agricultural and rural studies might bring some refreshing views about the forthcoming issues of

Either in the engineering perspective or in critical approaches, my claim is that these visions of the organization rely on the maintenance of a divide between techniques and social scenes. They do not benefit much from the theories of action in the workplace. My guess is that this position is also linked to the way in which those researchers are “stepping” in organizations to solve managerial problems from an engineering point of view, using the sociological mind’s eye, which would be the anti-symmetry of what Callon (1987) defines as the engineer-sociologist¹⁶. It is interesting to note that Moisdon (1997: 286) proposed the status of the ‘managerial designer’ with strategic skills for delivering management devices to organizations. He paid much attention to his intervention as a lever to induce changes which play on the exploration of the agentic effects that new devices are supposed to generate. Such a position triggers well-known issues of intervention in the domain of organizational change: how to muddle local order, organizational culture and any piece of the “social at work” to make managerial tools more efficient or, at least and in many cases, simply effective.

It seems that we should keep balancing between two positions: one stemming from a sort of sociologization of engineers’ point of view about apparatus of biopower, and the other from the sociological critique of apparatus. The first insight tends not to take the historicity of the link between management theory and management practices into account much, whereas the second one tends to consider management as the expression of the metis of capitalism ‘en dernière instance’. This balance expresses an uncomfortable, but certainly heuristic, position for researchers in management studies that expect to keep a direct link to managerial practices in organization. Here, we can understand the “charitable advice” of Latour (1996), advocating that management and organization studies are not really able, at the moment, to

¹⁶ At the time he was proposing a solution to embed technology studies in a shift from engineering to sociology, meaning that the construction was not completely “social” if we maintain this dualism: “*the study of technology itself can be transformed into a sociological tool of analysis*”. He also proposed to identify the position of the engineer-sociologist at a time of STS when the SCOT perspective was high on the scientific agenda (Callon, 1987: 83).

delimit and define specific techniques and knowledge, but that this risk should be taken as an opportunity to drift and defend a performative role. Taking this balance and this advice seriously therefore requires the conceptualization of this performative role, that is, also the rationalization process which is at stake in the agricultural and rural domain.

I define *dispositif* as a situated and on-going arrangement of human practices, social rules and technical devices which results of the accomplishment of the will of a principal and induces a specific involvement of a collective in the future. I shall immediately insist on the fact that this definition aims more at defining a dynamic than at talking about structure or contingent agency. What is important here is how a managerial purpose is framed into a setting which realizes a productive order that is the definition of an agency of actors (principals and agents), objects (artefact, devices and even behavioural recipes) and rules (elicitation (of convention about what and how to co-ordinate humans for the achievement of good)¹⁷. The concretization of mastery through a technology of power can be more or less isomorphic to the principal's initial will to achieve mastery. In a way, and similarly to technical objects, the concretization of management settings has the effect of making the plan an illusion, but a productive one. What is precisely important to consider are the emergent properties of management settings and their characteristics according to how the arrangement is realized. Depending on the contingency of collective action, and according to the values that are engaging people in a more or less common future, the technicality of objects, the completion of rules and the identity of actors are never fully determined within the framework or the plan of the setting. This aspect of our definition is fundamental since it is also a prescription for the study of practices.

Even if I consider the possibility of emergence, like Gomart and Hennion (1999: 225), my orientation is to focus on the 'passing'¹⁸ of rationalization and ordering, and thus to view management as an accomplishment which is not detached from the setting through which it comes to exist in and in-between organizations. Within this theoretical perspective I remain completely agnostic in terms of efficiency. I do not attribute any positive or negative values to this fundamental difference; I simply expect to follow actors in the way they achieve a measure of effectiveness thanks to the conventional dimension of their devices and tools. This agnosticism is sometimes understood by colleagues as a lack of commitment towards explored situation, but in my view it is the only way of questioning how efficiency comes to exist through practices concretized in settings, and thus to seriously take into account and deliver an interpretation of this waltz between practices as a matter of rationalization and the practising of those practices.

In this respect I expect to take part in the collective enterprise of taking practise-based study out of the niche of "local knowledge" for "local practices". As proposed by Gherardi (2006: 220), "if we are to determine the linkage among the various connections in action along the spiral from the individual to the institution, we must abandon the idea that the social order is

¹⁷ In Barbier (1999) we have already developed a discussion of management tools in a conventional theory perspective.

¹⁸ It means "that which lets/makes happen" (Gomart and Henion, 1999), which invites us to consider the properties of a shift that enables something to happen while being a constituent part of this happening.

aggregated or negotiated by a plurality of dissonant voices which eventually blend together to resemble a musical canon”. Another way of phrasing this idea is to say that the social is not an isotropic field of representations about society, and that we shall therefore find where and how the social is produced in a texture of practices that are, of course, situated and enacted but are also taking place in a situation that has been designed for this performance. This is where, in my view, an approach in terms of dispositif is useful, if not necessary, in order to engage researchers in reflexivity about the relations between the descriptive knowledge produced in our practise-based description and its translation into practice. Finally, I would like to suggest that if practice-based approaches tended to situate the focus of their empirical work within a dispositif perspective, it would certainly enable interpretive to shift the study of practices and practising from the individual to the institutional level. This represents, possibly, a middle-range theory of organizational arrangements within, at the border of or in-between organizations, with the view to creating a sort of symmetrical anthropology¹⁹ of organizing the manageability of heterogeneous entities thanks to knowledge-production and actionable knowledge.

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¹⁹ As underlined by Latour (1989: 419): « *Administration, bureaucracy and management are generally the only substantial means available to extend reality really far away (...). What appeared at the beginning of this book as large and isolated niches is more understandable if one pays attention to them as distributed elements in centres of calculation, spread in files and reports, spangled around all actor-networks and visible only because they accelerate local mobilization of certain means among many others which are necessary in order to administrate the people on a large scale and at a distance*” (our translation from the French edition).

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