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Olivier Borraz

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ARTICLE

Risk and Public Problems

OLIVIER BORRAZ

Centre de Sociologie des Organisations, Sciences Po-CNRS, Paris

ABSTRACT The study of risk in the French social sciences over the past 10 years draws upon a tradition of policy studies. Following an earlier period during which research focused on major catastrophes and technological risks, studies moved on to a broader range of collective risks. Emphasis was placed on the social construction of risks by social movements, NGOs, experts and counter-experts, whistleblowers, private firms and public administrations. Among these studies, two separate approaches can be observed.

A first strand of research focused on how existing risks became public problems, i.e., why and how among the many risks which surround us, some became major issues while others did not. This led to specific interest for processes of problem-building and agenda-setting. In these processes, the role of organizations was closely scrutinized.

A second strand of research focused on how existing public problems became framed as risks, i.e., the way in which an issue already on the agenda came to acquire new attributes which, by stressing a number of uncertainties and establishing links with other controversial issues, turned it into a risk.

From the sum results of these two strands, a general framework of analysis for the study of risks emerges, which stresses the dynamic nature of their construction processes, the political nature of the controversies which accompany risks on the public agenda, the dimensions of lack of familiarity and control in the risks that emerge, and the crucial importance of debates over calculating the risks.

KEY WORDS: Public problem, agenda setting, issue framing, controversy

Introduction

The literature on risks and risk regulation is characterized by the scarcity of comparative studies. Apart from some rare and exceptional works comparing risk regulation regimes across several countries (Brickmann *et al.*, 1985; Jasanoff, 2005; Vogel, 1986), most books and articles remain

Correspondence Address: Olivier Borraz, CNRS, Centre de Sociologie des Organisations, Sciences Po-CNRS, Paris. Tel.: 0140 626577; Fax: 0147 053555; Email: o.borraz@cso.cnrs.fr

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within the framework of a single country. Although this situation is not limited to the study of risks, and many other topics in the social sciences are also severely understudied in comparative terms, I would like to offer another explanation, namely that studies of risk are often embedded in a mix of national political and academic cultures, and that this constitutes a limiting factor for their enlargement to other countries. Yet much can be learned by a survey of the literature on risk in one country, not only on the issue itself but also on how it is conceptualized and how this reflects the workings of the social sciences in that country, along with the wider political and institutional frames of reference within which the issue has been addressed. In other words, although there is a need for more thorough comparative studies in risk and risk regulation, we must also acknowledge the fact that this will remain a hard task, given the strong differences in the way the issue has arisen in different countries.

This paper is concerned with the study of risk in the French social sciences, especially over the last decade. Initial studies of risk, during the 1980s, focused on major catastrophes and technological risks, forging useful concepts such as “major risk” (Lagadec, 1981a, 1981b) and “vulnerable society” (Fabiani and Theys, 1987) in order to analyse a range of potentially disastrous events in the face of which public and private authorities could do little to reduce or mitigate risks. Starting in the mid-1990s, research in sociology and political science moved on to a broader range of “collective risks”, analysing the way various activities came to be seen and managed as risk issues by public authorities, and in so doing drawing upon a tradition of policy studies. While the former were concerned with natural or technological disasters, the latter extended the notion of risk to a wide range of situations in which the threat was more diffuse, the issue often controversial, and the activity fraught with a variety of uncertainties (from scientific to social).

The Academic and Political Context of the 1990s for the Study of Risk

The shift from natural or technological disasters to collective risks was triggered by a research programme launched by the CNRS (*Centre national de la recherche scientifique*) in 1994. The programme, entitled *Risques collectifs et situations de crise* (collective risks and situations of crisis), financed a wide range of research projects in the social sciences and simultaneously organized debates, discussions and a flow of information within the community of scholars and students working on risks. It defined three dimensions of the notion of “collective risks”: the threat to vital collective interests; the undermining of the social and political foundations of a system; and an alteration of the capacity to understand and analyse reality. Subsequent studies and publications provided a rich set of data. Although varied in their approaches, they emphasized the construction of risks by NGOs (non governmental organizations), experts and counter-experts, private firms and public administrations. Special interest was also

shown in controversies, social movements, expertise and decision-making processes. Finally, most of the research conducted in this field clearly departed from the dominant risk-perception framework in the Anglo-Saxon world, in favour of a more political approach to risks.

Yet this shift cannot be understood separately from a series of crises and controversies which arose almost simultaneously, though independently, and provided students and researchers in the field with immediate case studies. First the blood transfusion system and then BSE (bovine spongiform encephalopathy), GMO (genetically modified organisms), asbestos, nuclear waste, lead poisoning, urban sludge, mobile telephony, waste disposal, food safety, global warming, and vaccinations all offered opportunities for research in sociology and political science. These events created a parallel need for institutional reforms, foremost amongst which was the constitution of health agencies (for food, drugs, environmental safety, the workplace). These provided further opportunities for in-depth inquiries and interventions by social scientists. Finally, these crises and controversies played a decisive role in the focus on health, rather than initial concerns for natural and technological disasters, and later environmental risks.

In other words, the study of risk in sociology and political science over the last decade is clearly inscribed within two simultaneous trends: first, a broadening of the notion of risk to a large variety of activities, of which potential outcomes in terms of health remain unpredictable (they are “emerging risks”) but which represent a threat to the social, economic and political orders; and, second, a cycle of crises and contention around health issues, which shook both the state and French society, and offered opportunities for research projects along with a growing number of demands addressed to the social sciences by public and private organizations.

This has several implications.

First, as mentioned above, most studies in sociology and political science have adopted a constructionist framework.¹ Under this general heading, emphasis has been placed either on the role of various agents in promoting a risk, the influence of social movements, and the use of “extra-scientific” data; or on more traditional policy analysis in terms of problem definition, agenda-setting, the role of interest groups and the influence of institutional arrangements. In this context the concept of whistleblower (*lanceur d’alerte*) soon gained wide currency (Chateauraynaud and Torny, 1999) for explaining how issues became framed as health risks. The notion of a “hybrid forum” was also widely discussed in order to analyse processes of deliberation and knowledge production between experts and lay persons (Callon *et al.*, 2001). More generally, and whatever their initial disciplinary background, scholars have often combined a political science approach to

¹ It is worth noting that these studies never made any reference to the sociological literature in the US which adopted a similar framework, although their results are often similar (Tierney, 1999).

policy agendas and problem definition (drawing on the work of Kingdon, 1993; Cobb and Elder, 1983; Rochefort and Cobb, 1994; Garraud, 1990; Lascoumes, 1994) with a sociological approach to public problems (Gusfield, 1981; Dewey, 1954; Wildavsky, 1979; Setbon, 1993) and use of methods and concepts from science and technology studies (Callon, 1986; Latour, 1989; Wynne, 1996). This has made it possible to describe the complex process through which an activity came to be recognized as a risk and, simultaneously, a public problem. In this process special attention has often been paid to the different representations of a risk, how it was made visible and measurable, the definition of accountability, the depiction of arenas within which the controversy took place, the role of the media, and conflict between experts.

Second, the majority of studies do not simply analyse the process through which risks emerge as policy issues, they also study how risk is managed. In fact, they rarely establish a clear delineation between these different phases, since in many cases the intervention of public authorities partakes in the framing or the amplification of a risk. Yet all of these studies confirm the fact that issues of risk mobilize a great number of organizations, and that it is often from the interplay between those organizations that much can be learned on the construction of risks and their management (in this respect they echo a similar result in the US literature on risks: Clarke and Short, 1993). They thus justify the need for detailed analysis of the role and behaviour of the different participants in the controversy and decision-making process, since these issues often reveal sharp contrasts in the participants' interests, values, representations, repertoires and stakes. More precisely, they demonstrate the fact that the emergence of risk issues is as much a result in the changing pattern of relations between different organizations, as an element that contributes to further changes. Following Dobry's (1986) theory that political crises are the result of a process of "desectorization", i.e., a blurring of boundaries between sectors, these studies have illustrated the fact that risks often reveal deeper changes within a regulation regime, institutional arrangement or social order, while simultaneously contributing to a redefinition of identities, roles, rules and repertoires among the different organizations – as, for example, in the case of food safety in the mid-1990s (Borraz *et al.*, 2006).

Third, all of these studies have focused on the role of the state, both to highlight its responsibility in the emergence of risks (through failures, errors, dysfunctions) and to assert the need for it and its components to adjust to a situation marked by the proliferation of "new risks" (i.e., risks characterized by a high level of uncertainty), a lack of trust in science, a call for more deliberative and democratic procedures, and a multiplicity of stakeholders. The origin of this focus can be traced to a book entitled *Conquête de la sécurité, gestion des risques* ("conquering security, managing risks") (Dourlens *et al.*, 1991), which described the shift, within the state, from the production of safety to the task of managing risks. Whilst ensuring security previously implied a capacity to establish scientifically what the

dangers were in order to tame them, public authorities are now faced with complex technical, economic and social systems that are unpredictable in their relations, dynamics and outcomes, thus calling for capacities in risk assessment and management. This type of conclusion echoes Beck's and Giddens' analysis of "manufactured risks" and their insistence on the disaffiliation between the modern state, and its "19th century pledges of security", and the nature of the "risk society", in which risks are "man-made hybrids" (Franklin, 1998). It is also consistent with Freudenburg's concept of recreancy to analyse the behaviour of institutions "that hold positions of trust, agency, responsibility, or fiduciary or other forms of broadly expected obligations to the collectivity, but that behave in a manner that fails to fulfil the obligations or merit the trust." (Freudenburg, 1993, pp. 916–917) Yet, while these authors suggest that we look elsewhere for a better understanding of what risks *do* to state and society, French scholars have remained centred on the state without attempting to go beyond. Hence, the belief shared by many social scientists and public authorities that the state's duty and responsibility is to protect the population against all types of risk to its health, and moreover that its agents actually have the means and capacity to do so (or at least can acquire them, given sufficient resources and the will among the highest officials). This is not entirely surprising, considering: 1) the strong connections between public administrations and the distribution of research grants: within these connections, research questions have emerged which reflect the interests of civil servants and researchers alike; 2) the fact that studies of risk and risk regulation in the French social sciences are strongly affiliated with policy studies, rather than adopting a more critical approach. In particular, a shift has occurred, from initial demands addressed to social scientists in terms of risk perception and risk communication, to questions aiming to achieve a better understanding of the interplay between a variety of organizations (*le jeu des acteurs*). Although this shift signals an acknowledgment by public authorities that the emergence of risk issues lies in part in the organization of the state itself, along with the diversity of stakeholders around a given activity, it implicitly preserves the status of the state in its capacity to coordinate, integrate and regulate complex social systems – a status which is never really questioned, let alone assessed.

These three major implications are useful for analysing the results produced by social scientists working on risks and risk regulation. The affiliation with policy studies, a dynamic field of research situated at the crossroads between political science and the sociology of organizations in France, has spawned a rich set of case studies on risks and public problems. These studies fall into two distinct, albeit closely related strands of research. A first strand focuses on how existing risks become public problems, i.e., why and how among the many risks which surround us, some turn into policy issues, generating controversies, triggering crises and calling for strong decisions, while others do not (although they could be judged potentially more hazardous). A second strand of research focuses on how

existing public problems become framed as risks, i.e., the process by which an issue already on the agenda comes to acquire new attributes which, by stressing a number of uncertainties and establishing links with other controversial risk issues and crises, reframes the problem as a risk. From the sum results of these two strands, it will then be possible to suggest a more general framework of analysis for the study of risks.

Turning risks into public problems

Why some potential risks become public issues and others not is a common question (Joly and Marris, 2003), usually linked to a second one: why is it that risks with a weak probability of occurrence, or limited effects, generate strong controversies, social movements, and highly publicized public decisions, while apparently higher risks (in terms of probability or outcomes) seem to cause less of a stir? A third question follows: how can variations between the regulation of different risks in a given country be explained, when differing potential outcomes or probabilities offer no explanation as to the level of attention they achieve? (Hood *et al.*, 2001)

Studies which have adopted this line of questioning have expressed an interest in processes of problem construction, agenda setting or issue framing. They postulate that there exists a certain family of phenomena which can become risks. This does not always imply that the risk pre-exists, but simply that among a wide variety of activities, some will become public problems construed as risks, while others will not.

Thus, for example, Decrop *et al.* (1997) analyse the process whereby natural disasters become an object of attention for public authorities, and in which the idea of risk is slowly given substance through the production of knowledge. Dourlens (2003) narrates the “silent history” of lead poisoning, in order to understand why it took so long to acknowledge this risk. She analyses the many steps, translations and transformations required to turn lead poisoning into a public problem. Henry (2004) demonstrates that public authorities were all the more willing to accept media coverage of a public scandal on asbestos, after several years of stalling, because they had found a solution to the problem. Writing on climate change, Mormont (1993) and Godard (1993) describe the “shaping” of the risk so that it would fit into a wider context of political debate. Mormont emphasizes the impact of the 1992 Rio conference, which propelled the messages of NGOs on global warming into the larger North-South relations debate, linking the risk to development issues. Godard adds that, in order to become a public problem, a risk must meet three conditions: first, a sufficient level of scientific knowledge; second, events which make the risk visible and seem to suggest that it is irreversible, while social groups judge their interests to be threatened; and third, institutional relays which act as translators between science and action. Finally, Setbon (2004), analysing the decision-making processes in health and safety issues, stresses the importance of the event which is responsible for the risk being set on the public agenda.

Several conclusions can be drawn from these studies.

First, they highlight the conditions under which a risk is put on the agenda. For instance, Dourlens (2003) insists that, for lead poisoning to become a problem, it had to be adjusted to the pre-existing categories of various professionals and public authorities. This process of adjustment required that certain dimensions of the initial problem be overlooked, certain agents excluded, and certain features put forward, in order to provide a definition of the problem which identified clear causal mechanisms and accountabilities – i.e., a definition which could then be acted upon. This was all the more necessary given the fact that, initially, lead poisoning was a clear example of an “ill-structured problem”. And although, like asbestos, it seems that there should have been no real doubt as to the need to act strongly on such a well-documented risk, it was precisely the case that many adjustments were necessary before this risk could be seen as a public problem. Dourlens adds, however, that this framing remains unstable and can evolve, for example if a group is successful in pushing forward another representation of the problem.

Second, these studies suggest that the role of controversies in the agenda-setting process should not be overplayed. Whilst it is customary to see such controversies as the triggering event which results in a risk being set on the public agenda, several authors point to the initial framing of the problem as a more determining factor. Joly and Marris (2003), comparing the case of GMOs in Europe and the USA, show that the decision by US authorities not to adopt a specific regulatory framework on GMOs made it harder for opponents to contest these later on, since food products made with GMOs had no real existence as a distinct category. By contrast, the choice by European authorities to provide a framework for the use of this new technology afforded a target for pressure groups, in particular to obtain the labelling of foodstuffs. In many cases the controversy has come later on in a process of contention and protest (for specific examples, *cf.* Gilbert, 2003b).

Third, most of the risks that have been studied were part of a series of health crises that began in the early 1990s. The protagonists all had in mind the list of failures and scandals which had led to these crises, and it was in relation to these that they often adjusted their behaviour and made decisions. The public health authorities in the asbestos case, for example, clearly acted with vivid memories of the contaminated blood scandal and the need to be careful not to reproduce the same mistakes (Henry, 2004). In general, each new risk is set in a narrative structure which stresses common features and tends to call for similar solutions by the state.

Fourth, these studies provide useful insights into the production and use of knowledge on the problem-definition and -solving phases. Not only is knowledge on risk issues rarely consensual, it is also rarely transferable in the decision-making process. Epidemiological data concerning lead poisoning are not directly usable by housing professionals who have to take measures on lead-based paints and plumbing (Dourlens, 2003). Setbon (2004) insists that scientific risk assessment is, in itself, meaningless: it is

only by applying a risk evaluation referential (benefit/risk, relative risk, cost/benefit, precaution) that the risk takes on a value and hence can be judged acceptable or not. The regulatory framework also plays a determining role on the impact of scientific knowledge. For instance, by promoting the precautionary principle the EU encourages the development of scientific controversies (Joly and Marris, 2003; Noiville, 2001). In the case of asbestos, the decision to turn to INSERM (the French national institute for medical research) for expertise rather than to the usual Ministry of Labour experts, often close to private interests, has opened the spectrum of available scientific information (Henry, 2004). On global warming, the knowledge sought has to make the risk perceptible, concrete and substantiated; it must establish causal links which point to direct responsibilities and sources of “evil”, and suggest that solutions do exist (Godard, 1993).

Fifth, these studies offer the opportunity to analyse controversies relative to broader values, interests and ideas. The controversy over the environmental and health risks of GMOs is inseparable from debates on the benefits of such a technology, polemics on globalization, or criticism of agricultural practices and policies. When experts and politicians disagree on the evaluation of a given risk for health, it is often because they adopt a different referential, which refers to distinct values: benefit of a treatment, cost efficiency of a decision, precaution given widespread fear in public opinion (Setbon, 2004). The controversy over global climate change is linked to debates on North-South relations (Mormont, 1993). Framing a risk as a public problem thus attaches contrasting values, interests and ideas to an activity, linking it to larger debates; this contributes towards the ambiguity surrounding the process of problem-definition, and in some cases its dynamic nature.

Some of these studies have had a strong influence on the understanding of the emergence of risks. A case in point is Chateauraynaud and Torny's sociology of whistleblowers (*lanceurs d'alerte*). In their definition an alert takes the shape of an individual or collective endeavour, aimed at mobilizing authorities deemed competent to act, or at least at informing the public of a danger, an impending disaster, or the uncertain nature of an activity or technology (Chateauraynaud and Torny, 1999, p. 37). This endeavour can be considered the first step in a process of agenda setting, along with finding the appropriate instruments to measure the risk and establishing links with previous events still present in collective memories. The authors insist on the importance of a physical experience with the risk, in order for the alert to be judged credible: the risk must be palpable. They also identify a series of tests (*régimes d'épreuve*) through which the risk may transit: watch (*vigilance*), alert, controversy, polemic, trial, crisis and normalization. In their study, Joly and Marris (2003) find that GMOs went through these phases, not so much in an orderly fashion, but rather as moments during which the definition, nature, features and so on of the risk were debated, transformed and crystallized. These phases took place in different arenas (court, media,

administration, expert committees, etc.) and with varied repertoires of arguments.

More generally, even if they do not always apply the complex framework conceived by Chateauraynaud and Torny, studies which refer to the sociology of whistleblowers tend to adopt some of its richer insights, and suggest that a key moment in the process of problem-building are the debates over the measurement instruments. Most crises and controversies which have occurred over the last decade tend to focus, at some time or other, on measuring the risks: this is a major stake in the battle opposing the different parties, since the instruments chosen will have a decisive impact on how the risk is made visible and assessed.

Turning Public Problems into Risks

The second set of studies, albeit close to the first in many respects (especially the methods of inquiry), differs on the order of events: its interest lies in the manner in which a pre-existing public problem is framed as a collective risk. This is not so different from the analysis of boundary effects by Baumgartner and Jones (1994), i.e., the impact of associating certain components with an issue on the outcome of the policy. This does not imply that risk is purely a matter of presentation; rather, such an approach emphasizes the features which are subsequently associated with the problem and impact on its definition and on the outcome of the decisions it calls for. Gilbert, in particular, underlines the many attributes with which a problem can be equipped, and the availability and nature of which depend on the institutional context within which the problem is debated. These attributes relate to the characteristics and emergence of the problem, and to its potential solutions. The key issue here lies in what framing a public problem into a collective risk allows: a problem labelled as a risk will be able to move across institutional borders, to trigger a change in competent authorities, and to call for a reorganization of responsibilities; it will also have easier access to the wider public sphere, draw a larger audience, and touch on more global political debates (Gilbert, 2003a).

Studies which have adopted this analysis postulate that there is no such thing as an inherent risk. Rather, the label “collective risk” can be attached to a wide variety of public problems, either intentionally (i.e., actors aiming to achieve such a definition in order to mobilize resources for their cause), or as a result of a dynamic process of contention. In both cases, the interest here lies in the changes brought to a problem in order to modify the conditions under which it will be solved.

Rumpala, for example, analysed the cases of household waste and trucking. Both issues became public problems following reports published by public authorities and private actors, the multiplication of local protest movements, the intervention of political parties, and media amplification. Both were later framed as risks, through a change in the cognitive and normative approaches of central authorities, a weakening of organizational

routines, an opening of the struggle over problem definitions, an evolution in the level of scientific knowledge and technical instrumentation necessary to estimate the risk, a shift in the assessment of the potential outcomes, an echoing of wider international debates, and a linkage with the issue of environmental protection (2003). In other words, risk was the result of a process of reframing, or shifting of boundaries, rather than an intrinsic quality of the issues. This leads the author to insist, in particular, on the way in which different agents undertake to associate, link and translate an issue within more general categories. But this is made possible by the fact that the problem being debated is seen as a potential source of destabilization within an institutional order. What the author does not explain is whether this destabilization precedes the reframing of the problem as a risk, or else follows or accompanies this process.

Borraz, d'Arcimoles and Salomon (2001) have analysed the process in which the use of urban sewage sludge in agriculture, initially an environmental issue (triggering local concerns over the odours), become a food safety risk. They show, in particular, that key elements in this process were: a political error (Thoenig, 1994) by central authorities in the drafting of regulations (an action undertaken by public authorities to quell a problem actually has the reverse effect of attracting wider public attention, due to an erroneous interpretation of the problem); a context of extreme sensitivity to health crises (BSE in 1996 and GMO in 1997); and a deliberative process centred on the claims of agricultural interests, which undertook to shift the problem towards the food safety arena and put the blame on agro-food firms and retailers. In this controversy the different agents faced a host of "derived risks" to their activity or legitimacy: economic, social and political. Yet they all agreed to focus on the risk for consumer safety, thus partaking in its crystallization, even though there seemed to be few grounds for any deep concern (Borraz and Salomon, 2003).

In another study, Borraz, Devigne and Salomon (2004) have analysed the emergence of a risk around mobile phone masts. Here again, they describe the process by which initial local concerns over aesthetic or land-value issues turned into a national problem framed as a risk for the health of neighbouring populations. Yet the framing was not so much due to the endeavours of one particular agent, as the result of the strategies adopted by the different stakeholders and competent authorities fighting over the issue. Risk quickly became the central organizing factor around which the various stakeholders undertook to define their actions: governmental authorities and mobile phone operators alike identified a potential source of crisis and, in order to avoid blame or financial consequences, decided to act upon a risk to their respective legitimacy and reputation; opponents and counter-experts saw the resources they could gain from arguing in terms of health hazards rather than simply planning concerns; local protest movements analysed the difficulties that state representatives, scientific experts and mobile phone operators encountered in responding to their concerns over health, as further proof of their failure to provide safety and answer popular demands.

Although experts and counter-experts disagreed deeply as to the existence of an actual risk for health due to the non-ionizing radiation emitted by these antennae, it is nonetheless in terms of risk that both sides to the controversy framed the issue. More precisely, the crystallization around the labelling of masts as a health risk is inseparable from the form taken by the controversy and the emergence of two clearly antagonistic sides to the conflict.

Barthe (2005) adopts a slightly different approach. In his study of the controversy over nuclear waste he shows that, in order to foster a political debate, the issue had to be politicized, i.e., turned from a strictly technical problem which seemed to have a single, best solution, into a political problem offering several alternatives. By labelling the problem as a risk, it was shifted from a scientific and technical arena to a political one in which other arguments could be mobilized for or against the technical solutions under scrutiny, and in which other agents had a right to a say in the decisions. In other words, the process is both one of opening up the range of possible solutions, and at the same time a first step towards a closure around a new definition of the problem. Somehow, paradoxically, risk is both a key factor in opening the black box and an element of closure, since the definition of a risk will entail delegation to experts, routines and instruments which will make the problem foreseeable, predictable, and manageable. Risk is both a political issue and a way of “controlling the future” (Ewald, 1996).

These studies seem to suggest that risk is a way of framing a public problem in such a way as to politicize the search for solutions. This politicization entails, in particular, a widening of the range of stakeholders, a reference to broader political issues and debates, the search for new decision-making processes (either in terms of democratization, or renewed scientific expertise), and the explicit mobilization of non-scientific arguments in these processes. But if this is the case, then it could also be true that risk is simply one way of framing public problems. Studies in the 1990s, in particular, showed that a whole range of social problems (e.g., poverty, housing, unemployment) had been reframed as health issues, with the result that their management was transferred from social workers to health professionals, and in the process was described in neutral, depoliticized terms (Fassin, 1998). Studies of risk, on the contrary, seem to suggest that similar social problems could well be re-politicized, i.e., taken up by new social movements, producing and using alternative scientific data, calling for more deliberative decision-making procedures, and clearly intended to promote change in the manner in which the state protects the population against various risks (health and environment, but also social and economic). In other words, framing public problems as risks could afford an opportunity for a transformation in the political debate, from more traditional cleavages around social and economic issues, to rifts stemming from antagonistic views of science, democracy and the world order.

Studies which adopt this approach often rely on concepts and methods derived from science and technology studies. Rumpala makes use of the concept of “translation” forged by Callon (1986) and Latour (1989), Barthe

(2005) insists on how choices become “irreversible”, Borraz and Salomon (2003) describe phenomena of “stabilization” and “destabilization” in complex networks of actors. These studies also sometimes refer to the literature on risk regulation regimes and strategies of blame-prevention re-engineering (Hood *et al.*, 2001). Many institutional arrangements adopted in the wake of the health crises of the 1990s are clearly intended to shift the blame to agents to whom government authorities have delegated risk assessment and sometimes management responsibilities. In other words, these studies offer interesting insight into what it means exactly to manage risk issues. In most cases, risk regulation is tantamount to adopting blame prevention strategies while stripping away the more decisive attributes which made the problem a risk – but not solving the problem itself.

Toward a Common Framework?

As in much of the social science literature on risk, it is hard to find a clear definition of risk in the various studies mentioned here. While some authors adopt a standard definition (probability of occurrence \times potential effects), others prefer a more popular conception (the potential for negative outcomes) or an economic definition (a probability ratio). Even though risk is conceived as a social construct, no real attempts have been made at a definition in sociological terms. Yet the limits of a strictly relativistic definition are evident in the two strands of research mentioned above: if risk is a latent phenomenon waiting to be propelled into the public sphere as a problem, then there must be some element of characterization of what constitutes a (potential) risk; in the second strand, there must be a distinct set of features which define a risk, in order to distinguish it from other potential ways of framing a problem.

Although this lack of definition has not hampered the production of case studies, it is clearly a handicap in today’s move towards a middle-range theory of risk and risk regulation. More precisely, not only is the absence of a common sociological definition of risk a problem in the move towards a more integrated set of results and the production of an analytical framework, it is also problematical in discussions relative to other frameworks and conceptualizations. For the most part, the studies mentioned do not attempt to enter into any debate with other strands of literature in other European countries or the US (with some exceptions: e.g., Marris, 2001; Peretti-Wattel, 2000), be it the risk-perception paradigm (Slovic, 2000), the cultural approach (Douglas and Wildavsky, 1982) or even risk-regulation analyses (Hood *et al.*, 2001); nor do they discuss in any detail the work of eminent sociologists such as Beck (1986) or Giddens (1990) – the only exception being science and technology studies (STS), largely owing to the role played by French sociologists in the construction of this paradigm.

Due to this lack of definition, the contribution of sociology or political science to the general, wider understanding of risk is not always as clear as

that of other disciplines such as economics, law or psychology. As mentioned earlier, sociology and political science tend to be seen as providing useful insights into the interplay between a variety of organizations around a given activity, thus affording various authorities a better understanding of why they encounter difficulties in managing certain issues. More rarely are these disciplines expected to produce knowledge on the actual nature of risk in our societies, the challenges to the state, the changing forms of political conflict, or the role of science.

Yet, from the sum results of studies in sociology and political science, it is possible to suggest a more general framework of analysis for the study of risks, which comprises four elements: 1) the dynamic nature of their construction processes (in particular in terms of inter-organizational conflicts and social movements); 2) the highly political nature of the controversies which accompany risks on the public agenda (often related to broader issues and highlighting conflicting values); 3) the dimensions of lack of familiarity and control in the risks that emerge (and the role of political officials in ensuring control over risk activities); 4) the crucial importance of debates over measuring risks (i.e., putting risk in numbers in order to make it visible).

First, risk is the result of a dynamic, haphazard, controversial and unstable process of construction. In a sense, risk is never entirely stabilized, it is associated with many uncertainties, its status like its boundaries change, following the dynamics of contention which contributed to its emergence. More than a frame, risk is thus closer to a state in the life of a public problem (Gilbert, 2003b), a state characterized by fluidity in its boundaries, struggles over the definition of the risk, debates as to who is accountable, etc. Labelling a problem as a risk exerts pressure on political authorities, in a way which tests their capacity to act. It is also an opportunity for rules and power relations to be redefined. Generally, the boundary between risk and crisis is unclear (Besançon *et al.*, 2004).

Second, risk is inseparable from wider political controversies and conflicting values, ideas and interests. Whatever the issue, be it limited in scale (sewage sludge or mobile phone masts) or on the contrary high profile (nuclear waste, global warming, asbestos, GMO), the move into the state of risk allows for links to be made with broader political, economic, social, moral, ethical or environmental issues. The risk of an activity is always more than just a health or environmental safety issue: it also questions the multiple dimensions surrounding that activity (its benefits, use, effects, etc.).

Third, risk always starts off with a loss of familiarity, a lack of control, an event which renders the activity visible. Whatever the activity, there always seems to be a time when it suddenly becomes noticeable, whereas prior to that it was either not seen, did not attract attention, was deemed familiar or was considered under control. By becoming noticeable, the activity is extracted from its initial context, given other attributes, and thrust into contexts which will modify its nature. In this process it comes to be associated with a host of diverse uncertainties, both scientific and technical,

but also with the behaviour of the producers, controllers or users of the activity. By extracting the activity from its context, it loses its meaning and sense of familiarity, and becomes threatening, unknown and potentially destabilizing. What these studies suggest is that without this initial process of extraction, an activity cannot be constructed as a risk.

Fourth, a risk always entails a controversy around measurement instruments and, more broadly, scientific and technical knowledge, since these serve to make the risk visible and to assess its probability and potential effects. Each side to the controversy puts forward its own instruments, references and measurements. The ensuing debate gives credit to the idea that many scientific and technical uncertainties characterize the activity, thus participating in the labelling of a risk – otherwise, why should experts disagree? Opponents and counter-experts have a clear interest in contesting official measures and devices, on the grounds that they dismiss certain data or are biased, while authorities and experts systematically denounce what they judge to be “junk science” and instruments that do not produce trustworthy data. Although the battle may rage over many other dimensions, namely social, economic, environmental or ethical, it will only persist if there remains a scientific or technical controversy, even limited in scale. The closing of this controversy will not immediately reduce the risk, but it will in many instances allow for a series of negotiations around the other dimensions.

These four elements of definition need to be refined, but they already suggest a series of openings toward other approaches in the study of risk. Regarding the psychometric approach, it seems possible to reintroduce the perception of risk within the dynamic process of contention, as a result of the activity’s extraction from its original environment and subsequent loss of familiarity and control (following a similar insight in Fitchen *et al.*, 1987). The social amplification of risk framework (Pidgeon *et al.*, 2003) also fits in well with the process whereby a risk acquires a greater level of generality and touches upon wider policy issues. The four elements also prove useful in further understanding the differences in the regulation of various risk issues, since the more uncertainty is attached to an activity during the process of risk labelling, the more the regulatory process will be under pressure to close the controversy. Finally, these dimensions seem to confirm many of Beck’s and Giddens’ insights, in particular the process whereby risks are made visible, the critique of science, the emergence of a new political culture, the loss of the state’s centrality, or the vulnerability of access points to expert systems.

Conclusion

The study of risk in the social sciences in France has been deeply influenced by a public policy approach, supplemented by problem-building and STS methods and concepts. This has made it possible to analyse how risk issues emerged strongly in the 1990s, in a context of crises and destabilization of

the state's capacity to provide safety to its population. Often centred on the state, these studies have suggested that many risks arose from state failures or dysfunctions, and gained substance through social movements and scientific controversies. They have done less well in suggesting deeper social factors responsible for the initial protests around certain activities, but have clearly highlighted the inherent political nature of risks. In this respect, these studies pave the way for further analysis on how the emergence of risk can be linked to recent transformations in states' capacities to ensure their populations' safety in developed countries.

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