# The Public Management of Risk: The Case for Deliberating among Worldviews

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# Abstract

This article argues that the public management of risk faces inherent "wicked issue" problems which are further accentuated in the context of the contemporary regulatory state. It is suggested that in order to overcome these limitations and inevitable trade-offs, there needs to be a more conscientious effort in setting out distinct components of any public management of risk, which should be considered and discussed through the lens of distinct worldviews contrasting interpretations and solutions, as well as potential "black-spots." It is only by acknowledging limitations of any one strategy and by considering plural solutions that there is less likelihood of disappointment when dealing with crises and disasters.

**KEY WORDS:** disaster and risk management, governance, public management, cultural theory, regulatory state

#### Introduction: The Public Management of Risk

**M**uch has been made of the various sources of risks and crises likely to affect countries in the course of the twenty-first century. Be it terrorism, demography, failed and failing states, critical infrastructures, "peak oil," vanishing bee colonies, collapsing fish stocks, or climate change, predictions and doom scenarios are often mixed with downbeat observations regarding the problem-solving capabilities of political systems. Risks associated with the running of public services, whether these concern the management of prisons, social services, or public health, also attract their fair share of gloomy assessments.

As the state is expected to cater for the material well-being of its subjects, advice on the proper management of well-being has been at the heart of generations of doctrinal ideas in public management. And if the adage that civilization is only seven meals removed from anarchy is true, then the implications for public management are considerable.

In this context, statements by leading politicians that "the nature of threats we face has changed beyond recognition . . . a radically updated and more co-ordinated strategy is now required" (Gordon Brown, March 19, 2008)<sup>1</sup> require a response by both students and practitioners of public management. However, the answers have hardly been straightforward. As in public management more generally (Hood, 2005; Lynn, 1996), students of organizational responses to risk can be divided between those who see the managing of risks and crises as a craft or as a science. As craft it is seen as something that can be picked up through learning from experience, by listening to and reading about those who have "been there." If it is regarded as a science, then the emphasis is placed on the adoption of clear institutionalized methodological procedures and hard-headed analysis guided by theory.<sup>2</sup>

This article does not advance a science of public management of risk in the sense of a universal theory derived from robust empirical investigation, nor does it seek to illustrate examples of managerial craft in preventing (or spectacularly failing to prevent) crises from occurring. Risk and crisis, as in so many other areas of public management, are inherently wicked issues, i.e., issues that are multidimensional with often unpalatable trade-offs (Boin, 't Hart, Stern, & Sundelius, 2005; Boin, McConnell, & 't Hart, 2008). Consequently, many would conclude that the public management of risk is an "impossible job" (Hargrove & Glidewell, 1990). Instead, this article argues that in the light of these challenges, a public management of risk, in order to be more effectively prepared, requires a systematic consideration of the prerequisites of different organizational approaches and what type of side effects and "Achilles' heels" different managerial strategies entail. A more conscientious effort to understand the conditions, contexts, and limitations in which a public management of risk takes place means that a better understanding of different strategies can be reached. It is through such a more informed understanding that the undesirable consequences of managerial strategies, especially when faced with acute crises and developing disasters, are likely to be less prominent than otherwise.

This argument proceeds in three steps. First, it points to the problematic context of a public management of risk whose causes are socially constructed, where answers are inherently uncertain, and where the conditions for actions are shrouded by ambiguity, information asymmetry, and organizational fragmentation. Second, based on grid-group cultural theory, this article points to four worldviews as to how to manage risk and crisis, and what sort of implications for the resources of government these various approaches contain. The conclusion argues that by encouraging contestation through structured conversations and the utilization of hybrid solutions more viable approaches to a public management of risk are likely. At the heart of any such search for solutions should be a more extensive "modeling" that takes into consideration social context, side effects, and trade-offs.

## Risks, Public Management, and the Regulatory State

So what are the problems that a public management of risk faces? What are the types of risks that potentially blow up in full-scale crises? And what are the political underpinnings that shape the context in which a public management of risk takes place?

Discussions concerning the risks facing an organization, government, or society conventionally start with the basic distinction between human, technological, and "natural" sources of risks and crises (Rosenthal, Charles, & 't Hart, 1989). Human sources include both intentional acts directed against the functioning of social (and technical) systems, such as acts of sabotage or terrorism, and unintentional effects of purposeful social action that produce dysfunctionality, whether it is in the case of so-called human-made disasters or the failure of high-reliability organizations to remain "heedful" (Weick & Roberts, 1993). Others have noted how organizational processes facilitate crises. This may happen through a "normalization" of deviance (Vaughan, 2005) or through a combination of complexity and tight coupling that allow small glitches to develop into full blown technological disasters (Perrow, 1999; Turner, 1978).

The public management of risk is not only about the identification, reduction, and prevention of "direct threats," it is also about understanding vulnerabilities occurring in day-to-day practice and attempts at "mopping up," once these vulnerabilities have been exposed. This is no easy task. The political, administrative and decision-making challenges vary across different types of risks and crises.

Different types of technology require different forms of organizational responses to cope with inevitable "normal accidents" (Perrow, 1999). Nature, like technology, as a source of risk requires decisions regarding levels of "anticipation," for example in deciding on the extent of defense provisions and "resilience," e.g., the dealing with the immediate context and aftermath of natural disasters. Nature, and its changes, affect long-term calculations about the likely implications for the operation of social and technological systems, for example, the level of expected rainfall in the context of countries relying on hydroenergy.

In the case of acute risks, public management is about immediate responses to, for instance, floods, earthquakes, attacks, riots, kidnappings, dangerous individuals "on the run," and such like, with all the problems that such crises provoke (Rosenthal et al., 1989). This contrasts with decision-making requirements in the light of "salient" risks, whether these concern the "lack of imagination" diagnosed by the 9/11 Commission (2004) report, debates regarding intergenerational discount rates, or the inclusion of "unhelpful" or nonorthodox sources of advice. Similarly, "visible" events, whether "visible" in the sense of carnage or devastation, as well as those events "made visible" through evocative terms, such as "mad cows" or *Gammelfleisch* (putrid meat), offer different triggers to motivate decision making from those offered by "invisible risks" and less media-"friendly" topics.

In other words, the public management of risk covers a vast range of crosscutting societal boundaries, ranging from technological meltdowns and natural catastrophes to the day-to-day running of, for example, child protection services or early release schemes for prisoners. In addition, the public management of risk operates in variable contexts both of highly diverse and sometimes unpredictable public attention and of political blame-management strategies.

The result of this complexity and ambiguity is that the search for any one recipe for "the" public management of risk is highly problematic, even without adding the specifics of transboundary crises (Boin, 2009). First of all, lists of risks and crises that might permit a first cut at identifying different triggers and sources often end up without hardly any suggestion as to how to respond to these risks. For some, technological fixes prevent technological breakdown and human-made failings and will mitigate nature, others suggest that human failings are at the heart of problems, while others fatalistically point to nature as fickle and unpredictable, making extensive anticipation of trends and the adoption of countermeasures unnecessarily costly.

Second, apart from inherent contestation regarding the diagnosis and solution of any particular set of risks, there is also the inherently political setting of a public management of risk. It is not always clear which risks turn the heat on politicians and public managers and trigger regulatory or legislative responses (Hood & Lodge, 2005; Malhotra & Kuo, 2008). And while agreement might exist on the potential impact of risks, assigning probabilities to such events is likely to be highly contested. Furthermore, while probabilities of single events might be declared with some confidence (if only in terms of "high," "medium," "small"), the problem is not just that the calculations might be wrong or fail to foresee interaction effects, but that systems have limited redundancy, slack, or flexibility to deal with risks. For example, during the summer flooding of July 2007 in parts of England, one critical electricity substation was spared from flooding by two centimeters. While the immediate response to its flooding would have been the immediate evacuation of up to 1.5 million people, the "great unknown" was how long the substation would have been out of operation (with estimations ranging from days to months) and with what consequences for the evacuated population. An added complication was that while flood barriers were widely available, some failed to reach their intended destination because of flooding of access roads.

Third, and adding to the previously mentioned challenges, is the governance context in which the public management of risk is set. If public management is about dealing with the expected and the unexpected, we have to remember that the unexpected often depends on the "delivery" by third parties or through considerable supply chains. For instance, during an electricity blackout that affected London in late August 2003, hospitals faced blackouts not because they lacked emergency generators, but because diesel had not been stored to run the generators.

These governance problems of governing through third parties are accentuated when placed in the contemporary context of the regulatory state. The organizational arrangements of the regulatory state, namely privatized public services, the existence of quasi-autonomous regulators, and contractualized and formalized relationships across all the actors involved (Laughlin & Scott, 1997; Majone, 1994, 1997), mean that the preconditions for "heedful interrelating" (Weick & Roberts, 1993) are restricted, as professional norms and other informal understandings are overtaken by an emphasis on formality. This applies broadly, be it to the promotion of professional norms across professional boundaries, thinking in system-wide rather than single-organizational units, or the facilitation of informal compensation mechanisms should formal contracts not provide answers to contextual challenges. Institutionally, those regulators tasked with ensuring economic efficiency (and often accused of denigrating redundancy as "excess capacity") and equipped with a degree of formal organizational and decision-making autonomy are arguably further advancing the existing bias toward formalism. Relationships are not based on informal understandings and professional norms, but are defined by contracts oriented at the definition of liabilities among a multitude of organizational entities.

Moreover, the societal underpinnings that are said to have brought about the regulatory state since the mid-1980s accentuate those effects. Key triggers for the supposed rise of the regulatory state were not merely the internationalizing pressures of marketization and complexification (Lodge, 2008; Lodge & Stirton, 2006), but also rising societal resistance to the "high-tax" welfare state and increasing distrust in authority (Wildavsky, 1988). This regulatory state, with its emphasis on "regulation" as "regularized," "expert-driven" and "predictable" control was seen as an improvement on the supposed ills of "politics" and "discretion" (Moran, 2003).

Such initiatives, however, are said to have resulted in the "audit society" characterized by rituals of verification (Power, 1997). The rituals, in turn, accentuate rather than mitigate risks: given weak understanding of cause–effect relationships and opportunities for gaming regulatory systems, attempts to control only create an illusion of control while severe "noncontrol" is actually occurring. According to Michael Moran (2003), the tragedy of the regulatory state is not just its emphasis on control and standardization in ever more ways of life, but that it does so by relying on centralized, "high modernist" forms of surveillance. These attempts at dealing with risk are not only bound to fail because of hyped up ambitions that inevitably fail, but also because they seek to stamp harmonization and nondiscretion onto social systems without substantively dealing with risks beyond the level of high-level announcements and gestures. In a related argument, Damian Chalmers (2005) argues that the politics of risk, namely the use of risk analysis, fly in the face of the politics of anxiety that are generated by the sort of risks associated with modernity.

Finally, societal heterogenization (a point returned to in the next section) and the related distrust in authority make behavior modification more problematic, even when the blame-avoidance and frontline abandonment strategies by risk-averse politicians and public managers are left aside (Hood, 2007). That is, achieving compliance becomes increasingly costly as obedience to central norms by the wider population cannot be taken for granted, but rather will be faced by the need to adopt multiple communication channels and enforcement strategies that are sensitive to the increasingly differentiated demographic context. Blame avoidance and front-line abandonment are encouraged in such a context, as attempts at achieving compliance in the face of resistance and adversarial reactions becomes increasingly problematic.

In short, any attempt to establish a coherent approach to risk management is challenged by the different scales of risks; the social construction and therefore ambiguity of determinants of probability and impact; the impossibility to foresee all forms of interaction effects; and the extent to which the scope of action is constrained by resource dependency on other actors. On top of these widely acknowledged problems, the political and administrative setting of public management in the regulatory state are said to prioritize types of control over risks that make a comprehensive public management of risk ever more problematic, given preference to efficiency over redundancy, organizational fragmentation and contractualization, and a political preference for high-profile and centralizing solutions mirrored by a simultaneous rejection of any tolerance for inevitable imperfection. So are the calls for "a radically updated and more coordinated strategy" likely to inevitably be disappointed? The following sets out an agenda to at least clarify the inherent contestation that is inherent to a public management of risk.

## A Public Management of Risk: Components and Worldviews

While accepting that the public management of risk is a trans-scientific subject (Weinberg, 1972), i.e., one where we can ask scientific questions, but the technologies do not, as yet, exist to explore them in a "scientific" way, at least two "scientific" steps can be taken. First of all, a systematic view is required as to what components a public management of risk involves. Second, a systematic view as to potential variations in "instruments" is necessary. Both steps set the context for a more informed conversation and consideration of the prerequisites and assumptions that underlie particular managerial interventions. This section addresses these points in turn.

A public management of risk combines the operation of three essential components: standard-setting (the goal that one seeks to achieve), information-gathering (the capability to understand what is going on "out there"), and behaviormodification (the capability to change "things"). In order to achieve the intended state(s) of the world and to prevent the occurrence of undesired states of the world, a public management of risk, viewed here as a system of control, requires all three of its components to be operational.

How to set *standards* regarding risks is entangled in several debates over public management and regulation. The more precisely rules are written, the more boxticking, gaming, and noninnovation will be evident—the very characteristics that are regarded by observers such as John Braithwaite (2002) as incubating rather than reducing risks. In other words, rules are widely seen as appropriate responses for specific and stable environments—precisely those environments least significant for the public management of risk.

A further example of the key problems in standard-setting is "over-" and "underinclusion." In the public management of risk, the principle of being "innocent until proved guilty" is problematic. Whether and if so, how to prioritize type-I (false positives) and type-II (false negatives) errors has been influential in the study of safety regulation (including the "precautionary principle," broadly, the idea that in certain contexts, the onus of proof is to be reversed: the activity is not to be pursued unless it is shown that particular harm is not caused), but has also become increasingly prominent in debates regarding Homeland Security. The debate as to whether to err on the side of "false positives" or "false negatives" affects wider debates regarding individual and economic liberties and the right of the state (directly or delegated) to make "mistakes" in an "overinclusive" or "underinclusive" way (Frederickson & LaPorte, 2002), whether this is in terms of airport security (long delays at security vs. the risk of an attack) or civil liberties more widely, such as when to suspend individual rights in the anticipation of an activity with disastrous consequences.

Information gathering requires an understanding as to "what" to look for in the management of public risk, such as threshold or sleeper effects, or major discontinuities (Brooks, 1986) and "black swans" (Taleb, 2007). It matters, of course, "who" is providing the information. Such aspects are core to salient and acute risks. An added complication in either case is that information-gathering channels may be congested or otherwise restricted, as a result of overload, a considerable time lag in the transfer of information, or as a result of the widely observed cutting off of information channels at the top during times of crises.

Finally, *behavior modification* (or compliance and enforcement) requires choices in terms of strategies to prohibit, sanction, or license particular behaviors; whether to operate in a deterring, persuasive, or in a mixed strategy type of way; and how "punishment" should be adjusted in response to revealed or perceived wrongdoing.

Viewing a public management of risk in this way facilitates a contextualization and operationalization of these differences in a more systematic way. It highlights that any public management of risk is required to consider all three components on their own and as a whole, thereby providing for a systematic approach to the key debates and instruments inherent to a public management of risk. In a second step, one way of classifying not just broad policy solutions but specific interventions is to utilize grid-group cultural theory. Grid-group cultural theory has been widely used in the study of risk (Douglas, 1992; Douglas & Wildavsky, 1982; Rayner, 1992;

Fatalism	Hierarchy
Strategy: Risks cannot be controlled as events are all a matter of luck, as in a lottery or through contrived randomness; emphasis on inevitable side effects and surprises of any intended action	Strategy: Risks controlled through centralization, increased authority, and expertise; emphasis on consistency Side Effects: Demanding pre-requisites; potentially
Side Effects: Encourages alienation and distrust, no long-term relations	high depletion rate
Individualism	Egalitarianism
Strategy: Risks controlled through individual trial and error learning and market-type adjustments via pricing	Strategy: Risks controlled through localized collective decision-making, "us versus them" decision making
Side Effects: Recklessness in individual behavior, decline of group solidarity, and trust in authority	Side Effects: High decision-making costs, problems of boundary policing, problems in dealing with large projects, lack of external control

Table 1. Four Worldviews on the Public Management of Risk

Thompson, Ellis, & Wildavsky, 1990; Wildavsky, 1988), and public management (Hood, 1998; Lodge & Wegrich, 2005a; Wildavsky, 1989). Building on this work, the following sets out the rough contours of four different approaches toward how such a public management of risk can be put into operation—and with what side effects.

Using grid-group cultural theory in this way offers not only a convenient way to classify diverse arguments in a coherent way, but it also highlights the pitfalls of any particular perspective on risk. The rest of this section first examines the advocated solutions of each cultural theory's worldviews before considering their implications. Table 1 provides for a basic overview of the four different "takes" on the public management of risk.

A hierarchist perspective on a public management of risk relies on centralization of limits and boundaries, trust in expert judgment, and the belief in technical fixes. As an example, "dangerous individuals" can be dealt with through centralized databases linked to "automatic turnstiles" that allow the "invisible" tracing of individuals. This belief in authoritative expert judgments and technological control features, such as computerization, allows for a relatively optimistic view regarding the possibilities of a public management of risk, within certain limits. As a result, the hierarchist public management of risk relies on order and rules—whether it is in the formulation and setting of rules, the application of rules in behavior modification, or in clear accountability requirements governing information gathering.

In contrast, egalitarian approaches emphasize the importance of local systems to respond to risks and crises. "Localism" not only allows for tailor-made responses, but also reduces distortion and administrative time lags, given a distance between local events and central co-ordination centers. It encourages the flexible application of professional norms "on the ground" without need for extensive procedural controls (under the condition that a high degree of group cohesion already exists locally). Extensive participation in the formulation of response strategies increases the acceptance of public action and allows for the spanning of different organizational boundaries, thereby reducing the problems of exclusionary information—in particular biases generated through self-selecting experts. Standards are to be negotiated and locally adjustable, and also based on professional exchange. Behavior modification stresses the importance of persuasion and advice, and informationgathering is either via localized participatory channels or through forums for professional exchange.

Table 2.	Worldviews	and	Instruments	of a	Public	Management	of	Ri	sk
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Fatalist-Randomness	Hierarchist-Oversight				
Standard Setting: Ad-hoc adjustment of standards, if at all Information Gathering: Surprise inspections	Standard Setting: Explicit negotiated rules within specified limits				
Behavior Modification: Unpredictability of control	Information Gathering: Mandatory reporting				
	Behavior Modification: Sanctions based on "penalty catalogue"				
Individualism-Rivalry	Egalitarian-Mutuality				
Standard Setting: Competition between different rule systems, emphasis on information provision to allow for informed choice at the individual level	Standard Setting: Consensual decision making Information Gathering: Exchange among peers and local populations				
Information Gathering: Incentives, price signals, benchmarking	Behavior Modification: Deliberation and persuasion				
Behavior Modification: Choice, League-tables, reputational "classification effects"					

Individualist strategies similarly advocate decentralized decision making. In this case, however, the decision making operates within the logic of the market and is decentralized to the level of the individual rather than communities (as in the case of egalitarian advocacy). Individuals will reveal their "risk appetite" if risks are priced appropriately (ignoring issues of externalities and intergenerational effects, and, hence, discount rates). In other words, individuals will not pursue harmful activities if the costs are too high (such as those of insurance). In this approach, a public management of risk emphasizes the operation of (insurance) markets and the presence of limited rules to prevent market-distorting behavior and to "nudge" individuals to pursue actions they otherwise would be unlikely to pursue. Accordingly, information gathering largely concerns market access and information to allow for benchmarking, while behavior modification operates largely through "voting with their feet" mechanisms, for example, through league tables.

Fatalists are unlikely to advocate any particular risk strategy. They rely on trial and error and resilience, as all attempts at anticipating sources of risk and crisis are unlikely to be effective apart from incurring substantial opportunity costs. Furthermore, fatalists are likely to advocate control through randomized processes as any consistent regulatory approach would provoke evasive behavior. Indeed, such an approach avoids hunting around for the latest risk as it is reactive rather than proactive; it thereby also avoids the substantial opportunity costs that incur if societies seek to insure against all risks and potential crises. In that sense, standard setting involves, if at all, incremental adjustment while information gathering and behavior modification rely heavily on elements of surprise and unpredictability.

Table 2 brings the discussion of this section together. It illustrates how each of the four worldviews provides for different emphases in terms of instrument selection.

#### Side Effects and Trade-offs

Each of these four worldviews raises distinct implications for any public management of risk. All worldviews assume a particular state of the world and downplay particular attempts at counter-learning and exploitation by human sources of "risk." Dysfunctions are thus likely to emerge, first, because underlying assumptions do not hold and, second, because of inherent contestation within social systems and counter-learning. Implications in terms of resources relate most to the rate of depletion. The world of the hierarchist with its belief in centralization, expertise, and technological fixes requires an obedient society that accepts social ordering and values rulecompliance. Where such conditions are not fulfilled, obtaining compliance will require substantially more resources and higher degrees of coerciveness. In other words, hierarchist prescriptions require extensive societal compliance and oversight (as compliance will never be fully achieved), otherwise it requires extensive resource commitment that will encounter rapid depletion.

In the egalitarian world, compliance (and legitimacy) is generated through participation, inclusiveness, and localism. For such processes to operate, a consensus to find particular solutions is required as well as agreement on decision-making rules and an agreement that an emphasis on local decisions must allow for inconsistency across different locations. Otherwise the costs of finding agreement will be very high and there is risk of gridlock, especially as the evidence on deliberation generating agreement is at best mixed. The search for consensus can also lead to further undesirable consequences, namely when it tips into sectarianism and the generation of "us versus them" feelings. Under such a scenario, rather than inviting deliberation and inclusion, egalitarian solutions lead to exclusion of participants and options.

Individualist solutions that rely on market-based processes as well as "fatalist" devices are arguably low cost, as they require minimal organization, few resources, and are less affected by depletion issues than hierarchist solutions and gridlock through extensive deliberation. Critics argue that individualism as well as fatalism necessarily reduce professionalism and thereby reduce the possibilities of systems to respond to risks and crisis. Individualism does so by rewarding noncollective decisions, fatalism by emphasizing distrust.

In short, each of these four perspectives on the public management of risk not only advocates a particular type of solutions, but also prescribes solutions that undermine the feasibility of other instruments. In addition, their privileging of particular devices attracts side effects and requires specific trade-offs. Each worldview and its associated instruments attracts particular criticism when things go wrong and is likely to be affected by exploitation by opponents. Thus, hierarchical ideas regarding the coordination or "joining up" (i.e., centralization) of control measures not only accentuate problems of information distortion and time lags before any action is taken. They are also vulnerable to errors and attack: The illusion of control dilutes the importance of redundancy, whilst also reducing the potential for localized responses. Furthermore, centralized responses, by putting fragmented units into one organizational framework, are likely to lead to one set of dominant values (e.g., prevention) that might be suitable for some activities, but not for others (e.g., emergency management). In short, the hierarchist control state is also a high vulnerability state.

Egalitarian advocacy of a localized and participatory public management of risk is similarly vulnerable in particular ways. For one, localized responses are unlikely to deal with large-scale threats as well with those risks that are associated with highly mobile or only partially mobilized population. Fragmentation through local responses raises the specific challenge to advance shared norms across different units of decision making, while also, as already noted, inviting potential threats of sectarian exclusionary tendencies against non-mainstream views. In the world of the individualist type of public management of risk, where property rights and price signals allow for the adoption of particular risk management strategies, exploitation, and perverse effects arise. On the one hand, the capability of markets to deal with outliers, with externalities, and with long-term trends is debatable. On the other hand, while market processes encourage localized and fragmented decision making (thereby avoiding disasters of the "great leap forward" kind that Scott, 1998, associated with authoritarian regimes), they reduce the ability to come to large-scale and collective decisions. That is, individualist tools are characterized by the absence of joint norms, in contrast to egalitarian arguments. Indeed, whether individuals are capable to make informed choices in particular areas of risk can be questioned, given demonstrated cognitive biases at the individual level.

The fatalist world of luck and randomness appears to avoid all these problems. It neither believes in "putting all the eggs in one basket" nor in the capability of individuals or groups to come to informed choices regarding risks. It offers a recipe for spreading uncertainty and thereby reduces the opportunities for those relying on routinized and therefore predictable activities to exploit systemic weaknesses. At the same time, the fatalist world of contrived randomness is also an extremely vulnerable one. Contrived randomness institutes an inherent low trust, if not mistrust culture, thereby reducing the possibility for confidential exchange and undermining open learning.

Furthermore, both individualist and fatalist approaches toward a public management of risk arguably raise issues regarding their limits. In other words, what risk issues cannot be dealt with via markets (an argument that has gained more currency since financial regulation has contributed to the global recession that gripped states from 2008 onwards) or in nonanticipatory ways (i.e., whether the consequences of an error are potentially too high to allow for trial and error).

The discussion of the side effects and "Achilles' heels" inherent in each worldview points to the implications that result from a public management of risk within the confines of the contemporary era of the regulatory state. The regulatory state, according to key observers, links phenomena such as growing individualization and marketization with increased centralized surveillance and other forms of control that seek to extend into ever more social domains. As such, it links both hierarchist and individualist worlds. While the hybrid between those two worldviews provides some benefits, there are considerable problems.

For one, the emphasis on markets and competition (i.e., individualist solutions) reduces the possibilities of a highly ordered (i.e., hierarchist) strategy to succeed, as authority is challenged, and conventional authority is challenged. Equally, the regulatory state's tendencies toward centralized synoptic control (Moran, 2003) reduces the adaptive capacities of localized and individualized decision making.

The institutional fragmentation of the regulatory state as well as the underlying social heterogenization of the population further decreases the possibility of centralized surveillance and control activities to work. It undermines management relying on professionalism (through shared norms) and on "self-compliant" populations. In so doing, the regulatory state generates its own side effects and black

spots in terms of public management of risk strategies. It is in this context that demands for a "more coordinated strategy" by senior politicians appear more problematic than merely bland.

In sum, each worldview offers a way of life with respect to its public management of risk. Each of these worldviews' tools, if implemented in their pure form, would generate considerable vulnerabilities. In the end, the public management of risk is faced with two further problems. One is that there is contestation and no prima facie superior approach towards a public management of risk. The other is that regardless of which option is chosen, these choices generate their own specific blind spots and side effects.

#### Conclusion

We live in a world in which risks are everywhere, and where considerable energy is being spent on predicting an increased occurrence and severity of crises. The prevention of disasters as the most extreme outcome of crises is therefore paramount, especially when also considering the specific context of transboundary crises, characterized by their multiple boundary-crossing propensities.

One key implication of the above arguments is that the contestation between different worldviews should be made explicit in the day-to-day handling of risk. This requires first of all an acceptance that the so-called "proverbs of administration" (Simon, 1946) are inherently contradictory, if not incommensurable, and that simple words such as "coordination" are associated with incompatible definitions.

Such contestation among competing views needs to be identified and open dialogue between the worldviews should be facilitated in order to enhance capacity to deal with future crises. This requires the opening up of underlying assumptions that are usually suppressed. Encouraging argumentation in policy analysis and "professional scientific inquiry" is hardly new, given that problems in public management have rarely been conclusively solved. Thus, deliberation is seen as a superior learning strategy (Cohen & Lindblom, 1979; Majone, 1989). For such deliberation to take place, however, agreement on the rules of participation as well as codes of conduct are required. The rules may be difficult to enforce and indeed agreement is unlikely to be achieved. Nevertheless, the likelihood of reaching more informed decisions that will pass the test of time is much higher than taking decisions without such contested conversations.

Such a prescription may be regarded as typically unhelpful. Public managers need solutions, not encouragement to converse about side effects and trade-offs. This is especially so in the light of public managers acting as "blame magnets" of political masters who do not tolerate risks, pay asymmetric attention to different risks, deal with shifting and volatile agendas, and ignore informal understandings or may simply fail to act despite well-designed plans. Furthermore, the context of transboundary crises, defined by the crossing of functional, time, and geographical boundaries, accentuates the boundary effects across social systems that limit the scope for the encouragement of conversations. In that sense, if the initial section pointed to the weaknesses of the regulatory state in dealing with risk, then the context of transboundary crises underscores the limitations of a public management of risk. But even if there is no feasibility or opportunity for such conversations across worldviews, approaching risks and crisis through the lenses of the four worldviews offers advantages that advance the quality of decision making.

First, it provides for contrasting interpretations and a plurality of solutions that in themselves reduce problems of blind spots and resident tunnel vision. Second, it allows the study of a public management of risk to go beyond the celebration of leaders, the condemnation of failures, the endorsement of professional autonomy or the return to tired dichotomies between allegedly "technocratic" and "democratic" ways of conducting risk assessment and management (Jasanoff, 2006, p. 749). Third, and arguably more fundamentally, a public management of risk is required to develop the capacity to model constellations. Modeling here means a better understanding of the preconditions and inherent weaknesses of various strategies, in the light of particular constellations of actors, institutional settings, and situational circumstances. An understanding of preconditions cannot be gleaned from the instruments themselves; it must be considered more closely within the local context in which a public management of risk takes place and what sort of irritant effects any particular set of interventions might trigger.

Finally, if it is accepted that the greater the emphasis on any one worldview the greater the side effects, then the better response of any public management of risk is to rely on a mixed or hybrid strategy to ensure effectiveness. Such hybrids that draw instruments from different worldviews are also called "clumsy solutions" (Verweij & Thompson, 2006) and have been regarded as superior strategy in terms of providing resilience. While hybrids might indeed offer temporary stability and reduce one-directional blind spots, these should not be seen as universal and stable solutions (Lodge & Wegrich, 2005b). The public management of risk is, in short, never one way only, and managing that way is its own risk. Again, some may suggest that such a conclusion is, at best, stating the trivial truth. Life is complex and therefore inherently hybrid or "clumsy." However, it is argued here that most public management reforms (including those affecting responses to issues of risk) are driven by the motivation to establish "purity" and "clarity" in instrument choice (compare with Tom Birkland's contribution to this special issue). In addition, hybridity should not be confused with the kind of layering effects (where new sets of instruments are lumped on top of older ones) that are widely diagnosed as destabilizing rather than as stabilizing institutional arrangements.

To conclude, although flying in the face of dynamics in political systems that emphasize the superiority of centralized surveillance, coordination, and "clear" solutions, encouraging conversations across different worldviews and acknowledging limitations rather than solutions is likely to establish a more sound basis on which to conduct a public management of risk. On that basis, it is less likely that future responses to crises and disasters will encounter overly disappointing results.

#### Notes

<sup>1</sup> http://news.bbc.co.uk/go/em/fr/-/1/hi/uk\_politics/7304999.stm (last accessed February 11, 2009).

<sup>2</sup> Lynn and Hood both use the word "art" rather than "craft" in this particular context. They also point to a third community, namely "profession," driven by a joint calling. These two categories have been collapsed into "craft."

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