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GOVERNANCE AND ACCOUNTABILITY OF PUBLIC RISK

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GOVERNANCE AND ACCOUNTABILITY OF PUBLIC RISK

ABSTRACT

Risk represents the unknown future: an intangible commodity. Public risk may affect any part of society and government is expected to respond, implying a need for governance and accountability. Public risk governance though is complicated by the multiplicity of different stakeholders and the network of interactions. We explore public risk governance through the actors involved in public risk governance and accountability. Through synthesis of the related and theoretically consistent concepts of governance, stakeholder theory and social network theory we develop the concept and underlying principles of 'knowledgeable supervision' as a means of public risk governance.

KEY WORDS

Risk; Public Risk; Governance; Public Sector; Knowledgeable Supervision.

GOVERNANCE AND ACCOUNTABILITY OF PUBLIC RISK

INTRODUCTION

The discourse on ‘good’ governance of public risk requires a theoretical framework for the governance and accountability. The framework can be synthesized from related and theoretically consistent concepts of governance, stakeholder theory and social network theory. Arising from this we propose the concept of ‘knowledgeable supervision’ as a means of governance.

Several recent events can be defined within the sphere of public risk: the Japanese earthquake, tsunami and nuclear reactor disaster (Strickland, 2011); the financial crisis (Brigo et al., 2010); the UK telephone hacking (BBC News, 2013a); Norwegian killings (BBC News, 2012c); and English anti-austerity riots (Rogers et al., 2011). The nuclear reactor disaster, the telephone hacking and the financial crisis can be regarded as failures of management or values/beliefs within organisations/society, but arguably illustrate a deficit in public risk governance. A distinction can be made between risks that are preventable (financial crises and telephone hacking) or unpreventable (earthquakes and tsunamis); this will influence the nature and scope of risk governance.

For unpreventable risks, ‘Acts of God’, the focus is on government intervention to control the impact and consequence of the risk (i.e. government can implement building regulations to ensure buildings can withstand the impact of earthquakes); the lack of or poor implementation can be regarded as a failure of risk governance. For preventable risks, the scope of risk governance is arguably wider including prevention or minimisation as well as management of the impact and consequence of the risk.

'Public risk' as a concept is not well-established in academic literature (Burgess, 2009), and so provides an inspiration for the current paper. Since the events listed above can be viewed as failures to manage risks, the emphasis is given to governance and accountability. Thus, it is necessary to consider all stakeholders affecting or affected by the governance of the risk, their role and salience both individually and collectively as a network of stakeholders.

Public risk encompasses a diversity of risks from natural hazards, engineering, finance and social domains: anything likely to have an impact on the public. Each domain can be regarded as discrete, described as 'Archipelagos of Risk' (The Royal Society, 1992). This has provided a rich set of approaches for managing risks, but also many divisions in the methods taken. Hood et al. (2001) provide a typology of approaches through the concept of 'risk regulation regimes'.

Different technologies and regimes have been developed to address the specific form of risk within each domain, leading to each domain developing a separate language of risk: a 'Tower of Babel'. 'Risk appetite', common in Enterprise Risk Management (COSO, 2004), may be an anathema to those working in safety who would suppose there is no appetite for risk. Similarly, risk analysis has a different meaning in industrial risk and financial risk management; the former quantifying the probability of a known event occurrence (Paté-Cornell, 2002) and the latter identifying and assessing factors that may affect the success of achieving the goal.

A key dilemma for public risk governance is how to develop an appropriate form of governance (and accountability) that deals with both the specificity and the generality of the risk context. A single 'recipe' or an approach geared too closely to a particular context may run the risk of being too narrowly focussed or even distorted by the specific context. The Basel II Accord for the regulation of banking aimed to calculate the level of capital to be set aside as the buffer against unexpected risks (Haldane, 2011) but failed to

protect several banks from the capital shortages in the recent financial crisis. A further complication is the nature of risk itself, which is intangible and a debatable concept.

We propose the concept of ‘knowledgeable supervision’ as an approach to the governance and accountability of public risk. Our concept of knowledgeable supervision is broad enough to be applied to a range of contexts, being made specific by the knowledge base required by the context. It is also an inclusive concept assuming that all those involved have a ‘duty of care’ (e.g. Health and Safety at Work Act, 1974), shifting the responsibility of the risk from the sole concern of management to a shared responsibility of all those involved. Hence all stakeholders inherently should act as ‘knowledgeable supervisors’.

This addresses the criticism of governance that has concentrated the management of the risk in the hands of a few actors who may not have sufficient knowledge or skill to fully appreciate and deal with the risk. An example was the launch of NASA’s Challenger Space Shuttle which exploded during take-off, killing all astronauts on board. Management decided on the launch and over-ruled expert advice about the high likelihood of the explosion (see Boisjoly and Curtis, 1990). Our concept of knowledgeable supervision is thus distributive, based on shared ownership and embedded and shared accountability. Four key principles underpin the concept and are discussed fully in the paper: the co-ordinating role of government, shared responsibility, interdependence, authority versus accountability.

The paper is based on a review of the literature, observation of recent risk events and the authors’ involvement with the Risk and Regulation Advisory Council’s (RRAC) initiative on Public Risk (see Andreeva et al. 2009a, 2009b). Caperchione and Lapsley (2001:103) note: “The government domain is heavily circumscribed by policy makers and there are constraints which they may place on researchers to prevent the publication of sensitive data”. Hence, it is far from simple to encompass the interactions and debates

about policy making that arise within government even if one has been given privileged access, as is illustrated by Rhodes (2007). Our paper is thus necessarily theoretically grounded.

The following section provides more detail on the definition and concept of public risk. We then present a theoretical framework for the governance and accountability of public risk by synthesizing the theoretically consistent concepts of governance, stakeholder theory and social network theory. This is followed by a detailed discussion of how the framework can be applied to the governance of public risk by discussing the concept of 'knowledgeable supervision' and its underlying principles.

RISK AND PUBLIC RISK

Risk refers to a future event which may or may not occur and which may have positive or negative consequences (Ansell and Wharton, 1992). The traditional Western view of risk has negative connotations; hence risk governance is aimed at minimising or eliminating adverse consequences. The different perceptions of risk may be framed in the ontological spheres of positivism and constructivism. Positivists would see a role for quantifying and managing risk while constructivists see risks as socially constructed which need to be socially/culturally addressed (The Royal Society, 1992).

Complacency about public risks has developed due to the mythic belief that modern society can regulate risks. When a risk occurs, it is therefore more disorientating. This lack of acknowledgement of the public towards their responsibility for the risk they face, or may take, leads naturally to the demand for action to 'tackle' the risk. Many examples can be quoted: the recent high profile cases where a child has been attacked by a dog, leading to calls for more controls on owners of 'dangerous dogs' (Usherwood, 2013), a child at risk dies prompting calls for earlier action in child protection cases (Jones, 2008) or the recent financial crisis. Government is expected to act if there is a

food or medical scare. Our trust in authorities is affected by their ability to govern the risk, in turn impacting on their credibility (Josang and Presti, 2004; Blind, 2007; Poortinga and Pidgeon, 2005; Bohnet and Zeckhauser, 2004).

‘Public risk’ is primarily used in regulation documents (e.g. RRAC, 2009a) and has been defined as ‘those risks that may affect any part of society and for which government is expected to respond’ (RRAC, 2009a:3). This view implies an agency relationship in which the government is regarded as the agent in managing the risk and the principals could be regarded as the public and other risk stakeholders. One important aspect of public risk, though, is the multiplicity of different stakeholders or actors who, via a complex network of interactions, determine a particular response in a particular situation. These ‘risk actors’ or ‘risk stakeholders’ and the interactions between them make up the ‘risk landscape’ (RRAC, 2009b). This has been explored by the Risk and Regulation Advisory Council (RRAC, 2009b), including the role of civil servants and politicians in the domain of public risk (Andreeva et al., 2009a, 2009b).

Often it is difficult to establish who is responsible for a public risk, whether it should be shared, and how it should be shared. Government is just one of the actors in the risk landscape. A more complex interpretation of agency theory is necessary where one recognises the multiplicity of roles each risk actor may play. At times the government may act as principal and at others times as agent. Figure 1 illustrates a network based view in which the responsibility for public risk rests with all stakeholders through the mechanism of ‘knowledgeable supervision’ with distribution of responsibility and increase in the shared ownership, and hence arguably a greater ability to deal with risk. Clearly though participants will be restricted by their knowledge and capability to act.

The framework in Figure 1 sets the context for the remainder of the paper. It illustrates a number of key points. It demonstrates the complexity of the ‘risk landscape’ comprising a variety of different stakeholders, the number and type of which may change

depending on the situation; hence the 'risk actors' should not be viewed as exhaustive. It supports the idea of distributive governance and the responsibility that should be shared across the network. The centrality of the Public is highlighted as the main stakeholder for whom protection is sought, and of Government, as a possible co-ordinator of the distributive governance.

The arrows in the diagram emphasize the idea of dependence (one-directional influence) and inter-dependence (two-directional arrows) of the 'risk actors'. Each specific situation may lead not only to the change of risk actors, but also to the change of influences (i.e. directions of arrows) in the diagram.

The behaviour and actions of government and the public, as having the main concerns over public risk, are shaped by how they interact with and respond to the other stakeholders. The nature of the relationships is dynamic with each actor negotiating or attempting to influence others' actions. For example, the media attract audiences, alert, inform and campaign; pressure groups inform, campaign and stimulate response; experts provide a source of specialist knowledge, judgement or expertise; Parliament and other politicians put pressure on ministers to act; the National Audit Office (NAO) will hold government to account of its actions. Government will both be influenced by and attempt to influence the media, experts and ultimately the public.

The risk of child abuse provides a useful illustration of 'knowledgeable supervision'. The media often highlights a specific case and brings it to the attention of other stakeholders (e.g. the Public). Experts, including social workers, the police, schools and the local Child Protection Committee for an individual child, will have to make a decision on how secure or 'at risk' the child in question is. They may be influenced by the courts, the media, the local public, pressure groups (such as charities or the church), the local authority and the Department for Education. The climate will be influenced by

international norms of treatment of children and human rights established by international bodies (e.g. Amnesty International).

‘Knowledgeable supervision’ suggests that by distributing responsibility for the risk it will be governed in such a way as to minimise or prevent the occurrence of the risk. Consistent with this view, Harker et al (2013:6) argue that “a different approach to child protection is needed, one that does more to prevent abuse “upstream” rather than intervening to stop it once it has already happened”. The National Audit Office (2013) refers to this as ‘Early Action’ aimed at addressing causes rather than symptoms. Harker et al. (2013:4), argue that everyone who works with children - including teachers, medical professionals, social workers etc. - has a responsibility for keeping them safe (HM Government, 2013). The Department for Education (underpinned by legislation through the Children Acts of 1989 and 2004) has overall responsibility for child protection in England and issues guidance to local authorities (e.g. *Working together to safeguard children* (HM Government, 2013)). Local Safeguarding Children Boards (LSCBs) in England use the guidance to ensure that key agencies work effectively together to safeguard children at a local level. Despite these formal ‘knowledgeable supervisors’, Harker et al. (2013) note that most children who are abused or neglected are not known to the services, and recognises the wider role of society. Indeed, most adults think that greater responsibility rests with parents, families, friends and neighbours to prevent child abuse rather than with government (Harker et al., 2013).

Charities, such as ChildLine and NSPCC, play a role in protection of children and supporting adults. Supporting individual children they develop knowledge that can inform schools and social services as well as children and parents to better protect themselves as knowledgeable supervisors of the risks of abuse. Hence each risk actor plays a role to play in supervising the risk and brings its own knowledge to bear on the

transnational organizations.” (Pierre, 2000:3-4). In a review of various definitions of governance Kitthananan (2006: 2-3) observes that the central themes of governance involve “... a transformation in the role, compass, power, and the activities of state in economy and society ... It widens the roles, responsibilities and burdens of social actors outside the state terrain.” In this complex, devolved mode of governance, the unit of analysis is the network of actors or stakeholders and addressing governance requires “attending to social partners and ideas about how to concert action among them” (O’Toole and Meier, 2000: 276).

Government remains one of the core constituents; though, public risks are increasingly seen as generic societal problems which need to be addressed by political institutions as well as other actors. The government no longer has sole control of the orchestration of governance which also poses potential problems in terms of accountability. Governance is thus more about how to maintain the steering role of government and political institutions. Donaldson (1992) suggests that government’s role is to ensure that the risk is adequately justifiably distributed amongst the stakeholders. Hence, government may regulate the relationship between players, such as between professional bodies and the public, but government cannot be the sole arbitrator of such distribution as all stakeholders have a responsibility in line with their capability to supervise the risk: ‘knowledgeable supervision’. Given this extension it is appropriate to look to stakeholder theory to examine the relationships in the governance of public risk taking into account the social networks that have evolved in such governance.

Stakeholder theory developed as an organisational theory to understand ‘to whom and to what’ the organisation should pay attention. It helps to understand how stakeholders may behave and how the main actor (such as government) may deal with stakeholders. The stakeholder approach “presents the stakeholder model as a map in which the firm is the hub of a wheel and stakeholders are at the ends of spokes around a

wheel” (Frooman, 1999: 191). In this model relationships are conceived as dyadic, independent of one another and viewed largely from the main actor’s vantage point. In social networks an actor does not deal with a single stakeholder, but multiple stakeholders simultaneously, with interdependent relationships among these stakeholders (Rowley, 1997). In the context of public risk, stakeholder relationships are multilateral, often coalitional, not bilateral and independent. Each stakeholder is part of the nexus of implicit and explicit contracts. In relation to policy areas of health and welfare, Milward and Provan (2000: 243) note, “...joint production and having several degrees of separation between the source and the user of government funds ... combine to ensure that hierarchies and markets will not work and that networks are the only alternative for collective action.”

Public risk governance therefore is about autonomous self-governing networks of actors that involve not just influencing government policy but “taking over the business of government” (Stoker, 1998: 23). It recognises the capacity to get things done which does not rest on the power of government to command or use its authority. This necessarily raises issues of accountability. Unless appropriately orchestrated there is the potential for leadership failure when dealing with public risk which can affect so many of the stakeholders. Differences often exist amongst key stakeholders in terms of goals, priorities and time horizons and these may lead to social conflicts, all of which can result in governance failure. This is similar to the notion of multiple accountabilities identified by Edwards and Hulme (1995) in their work into NGO performance and accountability, leading to the potential for over- or under accounting. In the context of ‘knowledgeable supervision’, the extent of over- or under supervision will depend on stakeholder or risk actor salience, agency and risk responsibility, motivations and participation, all of which are explored in the following sections.

Stakeholder salience

A key consideration when faced with multiple stakeholders is to whom and to what the main actor has to pay attention. Stakeholder salience (Mitchell et al., 1997) is the degree to which the main actor gives salience to competing stakeholder claims. Stakeholders can be identified by their possession of any combination of three attributes: power to influence, legitimacy of the relationship and urgency of stakeholder's claim. Stakeholder salience is positively related to the volume of attributes (Mitchell et al. 1997). These attributes, however, are variable, are not fixed, are socially constructed, and hence do not represent an objective reality.

As an indication of the variability of salience Frooman (1999) notes that controversy has surrounded the importance of legitimacy as a stakeholder attribute, arguing that the legitimacy or appropriateness of a stakeholder's claim may not matter nearly as much as the ability of the stakeholder to affect the direction or influence. In this regard, Frooman (1999) considers the resource dimensions of a relationship and the power that stems from it using resource dependence theory. This, he argues, adds a structural dimension to the consideration of stakeholder theory. Indeed, in the context of public risk this would seem to be reasonable since the individual members of the public have limited power and resource, but the overall relationship with the public carries significant weight. This weight increases with proximity to general elections and can also be increased by working with allies or through other powerful relationships (such as the media), what Frooman (1999) refers to as 'pathways of influence'.

Governance in this context identifies the power dependence in the relationships involved in the collective action; it can define the dependency of the actors on each other and emphasise the social dimension of the network in which individual stakeholder power can be increased through relationships with other stakeholders. The MMR vaccination provides an example in the UK during the late 1990s. An "expert's" evidence

(subsequently discredited) was amplified by the media and sufficiently influenced the public to bring about a drop in MMR vaccinations. The consequence was a recent major outbreak of a measles epidemic in Swansea (BBC News, 2013b).

Agency and risk responsibility

Arguably in public risk there is more fluidity in the definition of the principal-agent relationship: government can be either principal or agent depending on the context. In child welfare the development of a child depends partially on the actions taken by the parents (agents) that may be influenced by government (principal), but the child's development will also depend on the school system regulated by government (agent) on behalf of the parent and society (principal) (Cigno et al., 2003).

In our notion of knowledgeable supervision government may often determine the rules and regulations; occupy a co-ordinating role and/or set the boundaries, but it is not the sole determinant of these boundaries. Moreover, it may not have sufficient skill or capability to deal with the risk and others may command control over significant elements and/or have remarkable influence over action in dealing with public risk. The temporary closure of the UK's Leeds children's heart transplant unit was based on performance data produced by researchers keen to publish early that was later shown to be incomplete and insufficient on which to base an opinion (BBC News, 2013a).

In general, though, the public (principals) may look to government (agent) composed of politicians and civil servants to take action. In this case the agent is subject to the views of the public and is expected to respond to them (so-called 'demanding stakeholders'), but also needs to be aware of latent or dormant stakeholders (Mitchell et al., 1997), who can become 'demanding' stakeholders given the right conditions. Hence, the relationship of the stakeholders (the public) in this scenario cannot simply be classified as influencers or claimants.

Clarkson (1994) suggests that stakeholders may be voluntary or involuntary risk-bearers. Whereas voluntary stakeholders are aware of the risks they take on, involuntary stakeholders are instead (unknowingly) placed at risk by the actions of others (for example in the financial crisis). In public risk involuntary risk-bearers are a group where the principal-agent relationship becomes critical. Involuntary stakeholders may lack empowerment and become removed from risk governance. Hence they naturally look to government or some authority to manage the risk and take responsibility for them. This has implications for the perceived responsibility of stakeholders and links to Mulgan's (2000) notion of 'accountability as control', the external view of accountability, and 'accountability as responsiveness', the extent to which government pursues the wishes and needs of citizens.

The various forms of accountability noted by Mulgan (2000) are not necessarily mutually exclusive, neither are they static. Sinclair (1995) notes accountability to be subjectively constructed and has the ability to change, being sustained and given extra dimensions of meaning by its context; what she refers to as the 'chameleon of accountability'. Moreover, being accountable in one form often requires compromises of other sorts of accountability. Within the context of public risk and social actors all or some of these various forms of accountability may co-exist. The issue is deriving the appropriate 'accountability' which has to be in line with the capability of the stakeholder to deal with the risk. Where the public is put into the position of involuntary stakeholder in a risk situation, the roles of other risk actors (as agents) increase in terms of raising risk awareness so that the public can become more knowledgeable. This is recognised in RRAC's practical strategies for policy makers (RRAC, 2009a).

Stakeholder motivations

Much of the literature on stakeholders focuses on the influence of stakeholders over the central actor and how the central actor might manage its stakeholder influence. In any form of social exchange the parties involved will be motivated by perceptions of rewards and costs. The motivation or costs of the risk actors towards dealing with a risk are rarely simple and it is often hard to justify generalisation. In many instances the motivations are well-intentioned and make a positive contribution to society, such as the ban on smoking in public places (BBC News, 2012b). In some cases, though, the motivations of some stakeholders can cause problems such as the examples of the MMR crisis or Basel II regulation discussed previously. RRAC notes the behaviour of ‘risk-mongers’, stakeholders who “conjure up or exaggerate risk inappropriately ... in order to create some kind of advantage for themselves, such as financial gain, attention, power or even job security.” (RRAC, 2009b:3)

Specific motivation of the stakeholders in Figure 1 has attracted little research, though, the motivations of civil servants have been considered with little consensus. Some have suggested civil servants act as self-serving (Niskanen, 1971, 1973; Dunleavy, 1991), whereas others have been more positive in terms of the desire to serve society, (Downs, 1967; Noordegraaf, 2007; Rhodes, 2007) and the desire to take responsibility for tackling issues and making a difference (Noordegraaf, 2007). Some suggest the motivation is driven more by game playing and competitiveness as exemplified by “fun and playfulness of it”(Lynn, 1987) and “quick wins” (Rhodes, 2007). They may respond aligned to the benefit or damage that might accrue from the risk. If there is potential reputational risk then Hood et al. (2001) have suggested that civil servants will employ ‘blame avoidance’ strategies, though this is disputed by civil servants (see Andreeva et al. 2009b). Merely deciding which risk to take action on and which not to inherently involves taking risks, both personally and on behalf of others.

Government obtains its legitimacy through the public's willingness to accept its actions. The choices it makes will be based on beliefs about the salience given to the group it wishes to serve. Urgency of response will be moderated by government's own motivation, and this may depend on particular politicians and senior civil servants. The public's relationship to the risk is critical to government's reaction. Governments often wish to create the air of authority even in areas where they have little control, as illustrated in the following quote from Geoffrey Howe : "The history of post-war British Cabinets has been a continuous story of people trying to do too much, believing that they had power over events which in fact they lacked, treating national circumstances as entirely within their control and twirling the wheel on the bridge as though every move would produce an instant response in some well-oiled engine room below." (Hennessy, 1990).

Many authors (Portinga and Pidgeon 2005, Wrench 2007, Engineering Council 2011) argue that clarity and transparency are the first stage to dealing with a risk. Increasing the transparency and distributing responsibility and accountability for the risk among stakeholders may lead to less game-playing and distorted motivations.

Stakeholder participation

Stoker's (1998) claim that governance is about collective decision-making, specifically including public and private actors, suggests greater participation of stakeholders and collaboration. According to Ansell and Gash (2007:544), 'collaborative governance' has emerged in response to the "...failures of downstream implementation and to the high cost and politicization of regulation". As such, it represents "...an alternative to the adversarialism of interest group pluralism and to the accountability failures of managerialism." More positively, though, and consistent with our concept of 'knowledgeable supervision', Ansell and Gash argue that the trend towards collaboration

evolves from the growth in knowledge and capacity. They argue that as “knowledge becomes increasingly specialised and distributed and ... infrastructures become more complex and interdependent the demand for collaboration increases.” (Ansell and Gash, 2007: 544).

Public participation specifically brings about opportunities for incorporating societal concerns as well as ‘non-standard’ knowledge in the governance of risks (De Marchi, 2003). This is consistent with Mulgan’s (2000) notion of ‘accountability as dialogue’ relating to the public discussion on which democracies depend. De Marchi (2003) contends that in modern society the general public includes many scientifically literate people and to “treat them all as ignorant and uninformed is not only politically incorrect, but also pragmatically ineffective, as it discards an opportunity unique to modern democratic societies.” (De Marchi, 2003:174).

Securing public participation and collaboration, though, is not without its problems. English (2000) observes that the more diffuse the affected stakeholders and the more long-term or unclear the problem horizon the more difficult it will be to represent stakeholders in collaborative processes. Not all stakeholders will possess the skill and expertise to engage in discussions. Ansell and Gash (2007) suggest that successful collaborative governance processes are contingent on time, trust and interdependence.

Osborne and Brown (2011) argue that if one accepts the social construction of risk then risk governance is a form of negotiation between the stakeholders. This advances the notion of collaboration from participating in the solution to that of negotiating both the problem (risk) and the solution. The beliefs about risk essentially become the debate about the risk. There may however be difficulties in reaching agreement about the beliefs, due to stakeholders having their own view of the risk. Risk is contextual and dynamic: it is dependent upon various organisational, cultural and attitudinal aspects.

Each stakeholder has their own view of the risk; this is represented in the language used to describe the risk which impacts on the approach to risk governance. This is included in what Goddard (2005) refers to as accountability habitus, building on Bourdieu's (1990) notion of habitus.

Even when there is general agreement over the goals, negotiation may develop into a game between the proponents; such as the implementation of the Basel II Accord, where regulators gave responsibility for defining the risk management approaches to the lenders and then accepted the approach specified through discussion. Haldane (2011) suggested this may have led to game playing on the part of lenders. The extent to which this may occur (and did occur in the case of Basel II) depends on the power relationships in existence and links to the notion of stakeholder salience (i.e. larger banks ended up being subjected to disproportionately less regulation).

PUBLIC RISK GOVERNANCE AS 'KNOWLEDGEABLE SUPERVISION'

For the governance of public risk we therefore propose 'knowledgeable supervision'. 'Knowledgeable supervision' recognises that government does not have complete control but can oversee, steer and coordinate. 'Supervision' implies that other actors must also take an active role and responsibility in the process, akin to the network or partnership approaches advocated in models of new governance (Rhodes 2000). Supervision of the risks is distributed across the network of risk actors and stakeholders who share in the responsibility for the management of the risk and are accountable for their own behaviour.

'Knowledgeable' means having knowledge and understanding of the issues and also knowing how to act/respond. However, knowledge not only rests with government: the knowledge and expertise of others is also important. Indeed, others who might be less knowledgeable or have no expert authority (such as the public) nonetheless have a

responsibility to keep themselves informed. It also recognises that knowledge is not static and requires revisiting and updating as contexts change and evolve.

A key consideration is how to 'knowledgeably supervise' the unknown. 'Black swans', (Taleb, 2004 and 2007), describe rare events: outliers of extreme impact that are unpredictable. They represent the ultimate epistemic uncertainty or lack of fundamental knowledge (Paté-Cornell, 2012) where not only the distribution of the parameter is unknown, but also the very existence of the phenomenon itself. Taleb (2007) argues that in such instances our awareness is limited and our ability to predict or conceive of such an event occurring is restricted by our conceptions. These events have been wrongly characterised by Gaussian (normal) curves that fail to account for the "fat tails" of loss distributions (i.e. underestimate the probability of occurrence of rare events) (Taleb, 2007) and also failed to account adequately for the interdependence amongst the financial risks that banks were faced with that led to the recent financial crisis (Brigo et al., 2010; MacKenzie and Spears, 2012). Hence, banks took on more risk than they knew they were taking which increased financial instability.

Rarely though do individuals fully understand the situations they are managing. This may be attributed to: lack of experience, over-belief in models, failure to question assumptions, inability to recognise salient factors or to distinguish between predictable and unpredictable risks. Governance comprises performance and conformance (Short et al., 1999): arguably the financial community became overly focused on conformance with the Basel II Accords at the expense of performance possibly distracting regulators and banks from the real developing risks that led to the financial crisis. A focus on the implementation of rules without questioning the validity of the rules to achieve the goal is a potential recipe for failure of risk governance.

Paté-Cornell (2012) argues that "Black Swans" has been used as an excuse for poor risk management. She suggests the focus should be on making use of existing knowledge,

noting signals of risk, than searching for the unpredictable: a systemic approach to risk management rather than an event-focused approach. This should be proactive using all available information; monitoring signals, pre-cursors and near-misses (Paté-Cornell, 2012). This is akin the advocated approach to child protection (see Harker et al., 2013 and the National Audit Office, 2013).

A wider group may lead to a greater ability to see the dangers of ‘Black Swans’ and so we should harness all available information and knowledge from the network of stakeholders (supervisors). We now outline four key principles that underpin our notion of knowledgeable supervision: the co-ordinating role of government, shared responsibility, interdependence, and authority versus accountability.

The co-ordinating role of government - The notion of ‘knowledgeable supervision’ recognises that government does not (and may not wish to) have complete control over the governance of a risk situation, but can oversee, guide and coordinate and can, when necessary, pass acts or make changes to regulation. It is not the exclusive preserve of government to govern, but its role is to influence, shape, regulate or determine outcomes. “In much of the public and political debate, governance refers to sustaining co-ordination and coherence among a wide variety of actors with different purposes and objectives such as political actors and institutions, corporate interests, civil society, and transnational organizations” (Pierre, 2000: 3-4); such as the actors illustrated in Figure 1.

Risk governance has swung between regulation and deregulation depending on the most recent disaster and the desire to cut red tape. The Financial Services Industry was a heavily regulated business which was freed from many restrictions during an active period of deregulation based on the assumption that those involved in the risk were best placed to manage the risk effectively. It was assumed they were knowledgeable and skilled to deal with the risk. The role of government was primarily to monitor and

provide guidance and have official sanction if poor management occurred. The period of deregulation though led to issues around ‘mis-selling’. Self-regulation or market regulation also formed the pillar of the Basel II Accord which has been criticised for its part in the financial crisis. Whilst it is understood that those dealing with a risk ought to be most capable of managing that risk, there also needs to be adequate supervision of those involved with the risk, and supervision has to be capable: knowledgeable supervision. The wider the supervision is distributed across the network of stakeholders, the more likely it will be that the risk will be managed appropriately.

Shared responsibility – Public risk governance requires a set of institutions and actors that are drawn from but also extend beyond government. While Figure 1 depicts government at the centre of the diagram, this does not imply a central place in terms of power but rather a co-ordinating role; a conduit through which responsibility flows out to other actors and stakeholders, not the central controller of direction and actions. A shift in responsibility ‘from the centre’ to ‘through the centre’ whereby government is one of the many actors involved with a shared responsibility.

From the public’s point of view this may pose problems since they may expect government to take responsibility. Shared responsibility increases the opacity of governance to the public. Clarity and transparency are key; the public wishes to feel secure and believe that government is providing protection. When Prime Minister Clement Atlee decided on the UK nuclear strategy there was no discussion in Cabinet or Parliament, (Thorpe, 2001; Scott, 2006). Such action would no longer be deemed acceptable. Indeed, knowledgeable supervision requires supervision that can be trusted; neither government nor self interest groups dominating. It should allow for consultation and dialogue with the public; such as the approach taken by the UK Environment Agency in terms of stakeholder engagement for potential new nuclear power stations (Environment Agency, 2010).

Interdependence – Interdependence is a function of the social system and shared responsibility. It further reinforces the notion that there is no single source of knowledge, power or control. The various actors involved are to a degree dependent on each other (HM Government, 2013). It also implies that the capacity is shared, negotiated and mediated. There is not a strict separation between dependent and independent actors, which alludes to the ‘external’ view of governance (Mulgan 2000). This view sits part-way between the ‘old’ and ‘new’ conceptualisations of governance. ‘Old governance’ refers to the steering capacity of government; steering society through political brokerage (Pierre and Peters 2000). It assumes that society requires an externally-imposed authority. ‘New governance’ is based on co-ordination and self-governance manifested in networks and partnership approaches (Rhodes, 1996, 1997). The move from old to new governance implies a shift from hierarchy to heterarchy. Governance under such a system relies on others to be involved (HM Government, 2013). Our notion of knowledgeable supervision implies a situation where individual actors involved in governance are dependent on the knowledge of others (the public is often dependent on the knowledge of experts).

Authority versus accountability - In the context of public risk governance, the link between governance and accountability is not straightforward. The web of interactions and shared responsibilities creates complex relationships. There is a blurring of boundaries, responsibilities and accountability. In many senses responsibilities are shifting, away from government towards the public and other stakeholders. This is perhaps one of the unintended consequences.

Under the notion of knowledgeable supervision there may be a separation between identifying those with authority or responsibility (for example policy formulation of law) and those with accountability for implementation. The downside of this separation is the capacity of social forces to resist regulations and impositions – the view that citizens

know better. The role of governance in this context is to ensure not only shared responsibility but also a shared understanding of the consequences of not acting responsibly (as in the case of MMR vaccinations). There needs to be greater understanding of the motivation of those who are charged with risk governance. The accountability for their decisions should be regulated by the knowledgeable supervisors. The supervisors should not develop a blame culture which leads to distortion, but should be willing to delimit the accountability. Who should supervise is a key issue. Currently this is a dispersed group within their own silos of expertise with civil servants, politicians, auditors and others taking part. There is a need to bring them together.

Risk governance is the ability to facilitate decision making about risk. For some it is the transference of authority (and accountability) about risk from governments to others without assumption of superior authority, see Rosenau (1992) and Wolf (2002, 2005). We assume that it is applicable to all actors: governments, professional bodies and organisations within the private and public sectors (as per Mulgan's (2000) extended sense of accountability) and the public itself, see Figure 1.

The ownership of the risk and who governs it is fundamental and linked to subsequent perceptions of accountability. Often risks are not managed because there has been no assignment of accountability or responsibility for the management of the risk. Alternatively accountability may be distributed with differing perceptions of responsibility. Making all stakeholders responsible for the risk overcomes this issue, but there needs to be acceptance of capability which leads to knowledgeable supervision. According to the Health and Safety at Work Act (1974) all employees and employers are responsible for health and safety: all the stakeholders are part of the governance of risk. Their responsibility and hence accountability, though, will vary with their capability to have impact on the risk. It will be dependent on their knowledge and skills.

As can be seen by the notion of shared responsibility (encapsulated within the Health and Safety Act) it is clear that collaboration is a feature of 'knowledgeable supervision'. It is acceptance of a collective role in managing the risk perhaps as a negotiation. The salience of the stakeholder affects their ability to take action to manage the risk, but it does not mean that all individuals do not take some responsibility. In the case of child abuse it is acknowledged that families, friends and neighbours, and by extension others who come in contact, have a responsibility to act by making those in authority aware. This may lead to over supervision (c.f. Edwards and Hulme's (1995) multiple accountabilities), but is likely to lead to a more beneficial outcome. The counter to this is peoples' unwillingness to get involved; leading to potential under supervision, but the culture is changing by repeated incidence of cases. For example, NSPCC (2013) recorded a 15 percent rise in calls from adults concerned about children, citing 'responsibility', 'duty' and 'obligation' as key reasons for making the call. Parallels can be drawn in other contexts, especially in the actions of whistle-blowers.

CONCLUSION

Using public risk as the key context, we have explored risk governance raising some of the major issues. Often the 'knee-jerk' reaction to a risk is 'action': the implementation of regulations. Yet this fails to acknowledge the nature of risk itself, as an intangible entity. Our understanding is therefore restricted and our action may generate unintended consequences worse than the original risk. Adopting a fatalistic approach is far too naïve an approach in these democratic days; the public require to have trust in its government and that trust arises from it being able to manage risk. The view that those involved with a risk are likely best placed to deal with risk seems an influential view, yet there has to be 'knowledgeable supervision'. To rely on this

supervision to be adequate is likely to be false: market forces, or public reaction, are often seen as a corrective force, but they themselves suffer from insufficient insight.

What previously were roles of government are now seen as increasingly more common, generic societal problems which can be resolved not only by political institutions but also by other actors. The main problem is that government no longer has a monopoly on the organisation of governance which also poses problems in terms of fundamental accountability. This creates somewhat of a paradox in governance and accountability. If one accepts the concept of shared governance and accountability then the 'knowledgeable supervision' should be devolved across the wider group as typified by Figure 1. The value of this paper is in providing a map or framework for understanding the actors involved in public risk governance; applying a simplifying lens to a complex situation.

Our notion of 'knowledgeable supervision' recognises that government does not have complete control but can oversee, steer and coordinate. 'Supervision' implies that other actors must also take an active role and responsibility in the process, akin to the network or partnership approaches advocated in models of new governance (Rhodes 1996). Our notion of 'knowledgeable supervision' is underpinned by four key characteristics: the co-ordinating role of government, shared responsibility, interdependence and authority versus accountability. Within each risk context the precise network of risk actors and stakeholders needs to be defined, as well as the roles and responsibilities in relation to the governance of risk. The accountability arises out of the shared responsibility within the specific network and will be tested by the collective view of each actor in the network. We have presented a conceptual framework for further analysis. Further research may build on this framework by empirically testing it in risk contexts to further understand the interactions, influences and impacts of stakeholders in the risk landscape.

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