Risk-based regulation and better regulation in the UK: towards what model of risk regulation?

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In recent years the UK government has undertaken a number of initiatives and institutional changes related to risk and regulation. This paper analyses these recent developments in the context of two models of risk policy-making and regulation characterised as 'scientific-technocratic' and 'socio-political'. In the former, risk is an objective concept, separate from perceptions, which can be analysed by statistical techniques and regulatory remedies can be proposed on the basis on economic cost-benefit analysis. Risk policy-making and regulation is and a technocratic process led by experts. In the second approach, risk cannot be easily technically conceived and quantified. Risk merges with uncertainty and subjective perceptions of risk merge with the objective. Risk policy-making and regulation should therefore be a more democratic process with dialogue and input from a wide range of affected social and political actors. Much of the rhetoric of the recent initiatives and policy developments, such as the quantitative techniques emphasised in Regulatory Impact Assessments (now referred to as Impact Assessments), suggests a move towards a more scientific-technocratic approach to risk and regulation. However, the paper shows that actual risk regulation retains many important elements of the socio-political approach. Questions about the suitability of the impact assessment in their current form are raised.

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1. Introduction

In recent years the UK government has undertaken a number of initiatives and institutional changes related to risk and regulation. The most significant recent development is the creation of the Risk and Regulation Advisory Council, a governmental advisory body set up on the basis of a belief that 'policy-making would benefit considerably from a fuller and more rounded consideration of public risk'. This Council replaced the Better Regulation Commission (BRC), itself set up in 2005 along with the Better Regulation Executive (BRC) which replaced the Better Regulation Task Force. Also in late 2007 the BRE initiated a review on risk and the health and safety regime. All this indicates that the government thinks all is not well and reflects perceptions of an excessively risk averse society and policy process leading to inappropriate and inconsistent regulation.

This raises questions about whether policy and regulation should be governed predominantly by experts undertaking 'objective' analysis of risk or whether governance should be more participatory with subjective judgements ranking alongside the objective. There are reasons to believe that the trend towards risk based governance implies the former (Hutter, 2005) yet the need for broad participation and the recognition of the qualitative and judgemental aspects of regulation remains widely recognised. Also risk and the prevalence of risk aversion and risk seeking are contested and there are different approaches to risk policy-making and regulation. In discussing the aspiration towards 'consistent risk management' Hermansson (2005) distinguishes three models: a 'standard model', highly recognisable from the above discussion of realist risk, a 'model of inviolable rights' and a 'model of procedual justice'.

More commonly, an issue that pervades the literature on risk and risk regulation, sometimes explicitly, sometimes implicitly, is two perspectives on risk which are deeply embedded and can be referred to as 'the two cultures' (Kemshall, 2002 p11; Hood and Jones, 1996, ppxi-xiii). The two cultures suggest two different models of risk regulation and governance (Royal Society, 1983, 1992; Baldwin and Cave, 1999, pp145-148).

The first model can be labelled variously as 'scientific-rationalist', 'realist-absolutist' or 'modernist' and is referred to as 'scientific-technocratic' in this paper. In this model, risk is an objective concept, separate from perceptions. risk can be quantified and understood by mathematical, scientific and technological analysis and rational responses to risk can be developed based on the level of risk that society deems to be tolerable. Regulatory remedies can be proposed on the basis on economic cost-benefit analysis. Risk policy-making and regulation therefore is and should be a technocratic process led by experts. Much economic analysis of risk is within this perspective; cost-benefit analysis is undertaken to assess what individuals and society are willing to pay to mitigate risk.

The second model is variously labelled as 'social constructivist', 'relativist', 'political/democratic' or 'post modernist' (Adam and van Loon, 2000, p8) and is labelled 'socio-political' in this paper. In this approach, risk cannot be easily technically conceived and quantified. Risk merges with uncertainty and subjective perceptions of risk merge with the objective. Leaving risk analysis to elite experts is thus insufficient and democratic systems of risk management have to be established to reflect this. In particular, there is scepticism about the idea that quantifiable risks can be identified. Failures of risk management are often due to excessive faith in quantitative techniques and a futile aspiration towards

more and more numerical accuracy at the cost of effective and more subtle understandings and analysis of the qualitative aspects of risk. Risk policy-making and regulation should therefore be a more democratic process with dialogue and input from a wide range of affected social and political actors.

Of course, understandings of risk are much more subtle than this rather stark dichotomy. There are, for example, some commonalities between the perspectives and many subtle differences within each. Much analysis and many analysts strive to move beyond these rather rigid bipolar oppositions and seek a more complete analysis (Adam and van Loon, 2000, p8).

This paper analyses these recent developments in the context of two different models of risk policy-making and regulation. The next section details the two models and their takes on risk and policy-making and regulatory governance. Section 3 shows that much of the rhetoric of the recent initiatives and policy developments, such as the quantitative techniques emphasised in Regulatory Impact Assessments – now referred to by the UK government as Impact Assessments (IA) which is used in the rest of this paper – suggests a move towards a more scientific-technocratic approach to risk and regulation. This appears to be connected to neo-liberalism and the deregulatory thrust of the better regulation agenda. Section 4 shows that despite this, the paper shows that actual risk regulation and policy making in the UK retains many elements of the socio-political model. This raises questions about imposing uniform mechanisms or methodologies, notably the impact assessment, on different areas and whether the limits and problems of the impact assessment in practice are due to excessive emphasis on the technocratic model.

2. Models of risk regulation and decision-making

The scientific-technocratic model

A modern scientific view of risk evolved from the Enlightenment which saw an abrupt departure from the Middle Ages when risk was associated with 'fate', 'destiny' and 'acts of God', that is, they were beyond human understanding and control (Lupton, 1999, p5; Kemshall, 2002, p4). Seventeenth and eighteenth century Enlightenment thinking shifted the meaning of risk towards a determinist view of outcomes, ie they were based on universal laws and causality (Kemshall, 2002, p4), implying human understanding and control was possible. This formed the basis of a modernist view which draws on scientific and technical knowledge and particularly the development of statistical techniques to enable probabilities to be calculated and a statistical predictability to be ascribed to outcomes (Lupton, 1999, p6).

Although risk is often inextricably linked with uncertainty, the scientific view sees risk and uncertainty as two different concepts. In a classic work by Frank Knight (1921) risk is associated with circumstances in which the probability of particular outcomes is known or knowable whereas uncertainty is when outcome probabilities are not known or not knowable (Lupton, 1999, p7). Probabilities are derived from empirical data from particular circumstances which can be used to calculate the probability of particular events from occurring in similar circumstances. Thus, for example, the probability of an accident in a given period of time on a particular road is calculated from the number of previous accidents on the same road or similar roads. In complex technological systems, such as nuclear power stations, the probability of accidents can be calculated from empirical data on the failure rates of constituent components and systems. Thus an important dimension of modern risk analysis has become highly mathematical with claims of high predictability in the aggregate, though not of course for individual events.

In this vein of thinking a standard technical view of risk has developed and can be defined as 'the statistical expectation value of an unwanted event which may or may not occur' (Hansson, 2007). The 'expectation value' is the probability of the occurrence of the unwanted event multiplied by its severity. The severity of the consequence might be, for example, the number of people killed in an accident. Risk is thus the statistically expected number of deaths associated with potential accidents. It is a standard view of risk adopted by and informing many public policy practitioners (Smith and Toft, 1998).

In this view, the idea of uncertainty is different from risk in that probabilities are unknown and possibly unknowable and incalculable. Uncertainty refers to circumstances and events in which there are insufficient empirical data to develop formal and scientific means of calculating the probability of outcomes. For example, there is often much empirical data associated with established types of financial investments (stocks, shares, bonds, bank deposits etc) and probabilities can be ascribed to these but new, unique and speculative investments (eg in a new technology) are uncertain because of the lack of data. Of course, under uncertainty, qualitative judgements based on informed experience or vague hunches can and are made, but there is no data on which quantitative outcome probabilities can be calculated. This view of the difference between risk and uncertainty can be useful in decision theory and analysis (Hansson, 2007) and is often a basic assumption taken in formal scientific and economic modelling, for example, that associated with the climate system in the Stern review on the economics of climate change (Dietz et al, 2007, p231).

In this scientific view, risk is objective, that is it exists 'out there' separate and distinct from people, the subjects of risk. Subjective or perceived risks are risks in the minds of the people subject to risk and can be and often are very different to objective risks, for example, some people consider flying to be more dangerous than travelling by road transport whereas objective statistics show the converse. Subjective risk is a complex social and psychological issue not easily reducible to the mathematics of modern risk science (Hansson, 2007). Advocates of the scientific view tend to do little more than tolerate the subjective view of risk seeing it as little more an irrational personal, social or political phenomenon. The objective of policy makers should be to communicate, inform and educate people to see beyond these irrationalities towards real risks.

A technocratic approach to policy-making, referred to as the 'standard model' by Hermansson (2005) and the 'SPRAT' model ('social pre-commitment to rational acceptability thresholds') by Hood (1996, p209) drawing on scientific ideas of risk can be distinguished. Risk can be quantitatively identified and the quantitative effects of risk engineering can be assessed. Based on socially accepted value for life figures which are 'willingness to pay' or 'willingness to accept' assessments, acceptable levels of expenditure on risk mitigation can be calculated. Advocates of this recognise that there are inaccuracies in risk assessments and inevitably some judgements are required under uncertainty. They stress that this is not a reason to give up on 'enlightened engineering' but more of a reason for continuous and rigorous adherence to scientific principles of risk in policy-making and risk management. Where they fail or are inadequate, better scientific and statistical techniques in risk assessment and better engineering of systems designed to reduce risk should be introduced. Where rational decision makers encounter significant obstacles from (uninformed) interest groups and public opinion better communication and education is required.

An argument for the technocratic approach is articulated by Stephen Breyer in his book 'Breaking the Vicious Circle: Towards Effective Risk Regulation' (cited by Baldwin and Cave, 1999, p146). It is based on an argument that existing risk regulation is in a vicious circle of tunnel vision (over-regulation

which does more harm than good), random agenda selection (driven by public's attention rather than rational appraisal) and inconsistency (different methods used across government, issue areas and agencies). Overcoming the vicious circle requires institutional changes are required to embed depoliticised and more rational regulatory decision-making. A key change suggested is a central administrative organisation 'with a mission of producing a coherent risk programme and a set of rational priorities covering risk regulatory programmes' (Baldwin and Cave, 1999, p146). Its authority and legitimacy would follow from its expertise, its technically sound outputs and its insulation from political pressures.

The socio-political model

A wide ranging critique of the scientific-technocratic model underpins the socio-political approach. An important problem with the scientific approach is a clear distinction between risk and uncertainty on the basis of quantifiability; there is a 'myth of calculability' (Kemshall, 2002, p5). The scientific basis for quantifying probabilities of outcomes beyond strictly controlled and simple actions such as rolling of dice or tossing coins can be questioned (Hansson, 2007). Beyond these current circumstances, actions will always differ in some way from previous ones (from which probabilistic data is derived) and therefore outcome probabilities cannot be ascribed with certainty. This suggests there are significant limitations to analytical models and indeed as Keynes argued, for example, statistical methods of economic forecasting are fundamentally flawed as they are based on uncertain knowledge (O'Malley, 2004, p4). Risk therefore 'is not reducible to the product of probability or occurrence multiplied with the intensity of scope of potential harm' (Adam and van Loon, 2000, p7).

In practice, risk and uncertainty merge together, they 'blur, converge and overlap' (O'Malley, 2004, p18). Most formal analyses of risk require that credible empirically based quantitative probabilities of model components be known and input into analytical models. In practice, however, 'such numbers are rarely available, they are usually assumed or invented, the alternative being that admit that formal treatments have nothing useful to say about the problem under discussion' (Adams, 1995, pp25-26).

An example of the blurring of risk and uncertainty is in the IPCC's summary of climate science (IPCC, 2007, p3). They state that they use terms to indicate 'assessed likelihood of outcomes such as 'virtually certain' meaning probability of occurrence greater than 99%, 'extremely likely', greater than 95% and 'very likely' greater than 90%. They also draw on a quantitative scale for the 'levels of confidence' in the science, for example, 'very high confidence' indicates a 9 out of 10 chance of being correct, 'high confidence' an 8 out of 10 chance. While these figures are clearly meant only to be indicative and provide an aid to understanding, in spite of their appearance they do not indicate quantitative probabilities. No quantitative probability can be ascribed to the chance of a new scientist overturning received wisdom, or more realistically, scientific wisdom changing slowly but distinctly in the wake of new ideas and evidence.

There are complex varieties or 'configurations' of risk and uncertainty (O'Malley, 2004, p18). Though a simplification, a continuum of risk and uncertainty can be conceived. At one end are areas where the probabilities are known with a high degree of certainty (described as 'trivial' by Adams, 1995), somewhere in the middle are areas of uncertainty in which we can make informed judgements based on experience, at the other end are those areas in which we have little idea of the outcome (O'Malley, 2004, p19). This all suggests that limitations to the underlying assumption in the shift to risk regulation that risk can be governed in a probabilistic and rather mechanistic way. More nuanced strategies of governance are required which at least recognise the varieties of risk and uncertainty and that qualitative as well as quantitative judgements are almost always required.

Adams argues that the 'prevailing orthodoxy' has failed in its attempts to make decision-making on risk scientific (Adams, 1995, p9). The approach particularly fails in areas of high politicisation or lack of consensus on basic goals, when there is scientific uncertainty or the issues transcend scientific boundaries (Hood, 1996, p210). It is especially a failure to recognise that risk decision-making processes and management are not just physical systems (such as a car engine or a heating control system) which can be analysed in a detached 'objective' manner; they are social systems with conscious and intentioned human beings playing important roles (Cvetkovich and Löfsted, 1999, p3). Risk communications exercises are often not successful and a key missing element is trust. Establishing and sustaining trust in risk decision-making is not something that can be established in some kind of one way communication of the facts but requires engagement and conflict resolution (Cvetkovich and Löfsted, 1999, p6; Kemshall, 2002, p7). In essence the approach, particularly that articulated by Breyer, is legitimated by technocratic expertise 'at the expense of legitimation through emphasis on democratic policy-making, accountability and due process in the form of participation' (Baldwin and Cave, 1999, p146).

Perhaps more fundamentally, the scientific-technocratic approach is essentially utilitarian which is subject of many well known criticisms. In particular, it can lead to violations of individual rights: 'the decisive criterion [of utilitarianism] is whether the total benefit exceeds the total risk (cost), the question of who is exposed to the risk becomes irrelevant' thus one person could be exposed to all the risks while a second gains all the benefits (Hermansson, 2005, p562).

Another problem of the scientific view is that subjective risk is more than an irrationality held by some which can and should be overcome by good communication and education. The dismissal of perceived risk as irrational ignores the possibility that subjective risk can make as much sense as objective risk (Lupton, 1999, p106). Those who stress the importance of subjective risk argue that they derive from different knowledges of the world and approaches to life each of which have their own valid logic and rationale. Risk is not only something that should be respected in some kind of soft way – we respect your view, we might even change policy because of it, but we know it is really wrong and we aspire to something more rational – perceived risks matter and should figure in risk governance in a more sophisticated manner than simply being hurdles to overcome.

The importance of perceived risk is emphasised by psychological and sociological approaches to risk. Baldwin and Cave (1999, p141) note several factors which have been 'said to impinge on perceptions of seriousness of risk' including: catastrophic potential; degree of control over the risk; familiarity with the risk; degree of equity in sharing risk; visibility of the benefits of risk taking; potential to impose blame on risk creators; delay in manifestation of harm; and, voluntariness with which the risk is undertaken. Sociological approaches also stress how these differing perceptions are influenced by social and cultural factors.

Three common reasons for differences in perceived risks and rationales are variations in controllability, voluntariness and familiarity. Voluntary, controllable and familiar risks are generally perceived to be much lower than the involuntary, uncontrollable and non-familiar (OECD, 2003, p55; Lupton, 1999, p106). An obvious example of uncontrollable risk is the contrast between air and rail travel, where the risks are not controlled (beyond the decision to travel in the first place), and car travel where risks taken are controlled. It is well known that risks of the air travel are perceived to be much higher and car travel much lower than they are. High voluntary risks, such as smoking, are also accepted much more readily than lower involuntary, such as small amounts of toxins in the environment (OECD, 2003, p55).

Many interesting examples of risk and the differences in familiarity can be cited. One's own home, particularly if lived there for much of life, is highly familiar and generally perceived as safe, even when it is situated in a highly dangerous area such as near a volcano or unstable ground liable to landslide (Lupton, 1999, p106). In contrast most people are very concerned about unfamiliar risks even if accident data show that they are tiny. The statistics, for example, on shark attacks on humans in warm coastal waters or bear attacks in north American wildernesses are tiny compared, for example, to deaths on urban roads (even accounting for the big differences in numbers of people exposed to such risks). Yet most people would be highly concerned and wary about the former risk and relaxed about the latter.

It can also be argued that there is an intrinsic inseparability of subjective and objective risk. This point is forcefully made by Adams (1995) who argues that subjective risk can affect objective risk. In the scientific approach, objective risk can be derived from real observed behaviour and outcomes, not those that are in the mind of the subject. Adams's critique is that the subjective perception of risk affects real behaviour by subjects and then can change actual outcomes and thus 'objective' risk. In effect risk becomes an *interactive* phenomenon (Adams, 1995, p23). There is a 'risk thermostat' process in which the balancing behaviour of human beings interacts with their propensity to take risks, rewards, perceived danger and actual accidents.

In summary Adams (1995, p23) notes that 'behaviour can be measured but its causes can only be inferred'. The scientific model thus draws the false conclusion that because behaviour and outcomes can be objectively measured, they have an objective cause, and thus can objectively be remedied. However, as these examples and argument illustrate, while real accident outcomes can be measured and therefore are objective, it does not follow that their causes are also materially objective, eg the design of the road.

This approach draws on criticisms of the technocratic approach and the recognition that risk is not simply a realist or physical phenomenon. As there are social, political and psychological aspects to risk, the decision-making and management process requires engagement with the public and civil society as well as scientific analysis and engineering solutions. Trust, a crucial factor in risk management, requires engagement with the public as well as convincing scientific analysis. Models of risk also need to incorporate the varying ways in which subjective and objective risk interact, or more specifically how human behavioural responses to risk environments can affect the risk itself and the efficacy of the interventions aimed to mitigate risk (Adams 1995, p59). It all suggests a need to explicitly recognise the complexity, variability and conflicting values that often shape risk and risk management regimes; there is a need to 'understand risk as a complex category made up of many different ways of governing problems, rather than a unitary or monolithic technology' (O'Malley, 2004, p7). Risk needs to be recast together with an understanding that the institutionalisation of risk in terms of insurance is very limited (Adam and van Loon pp12-13).

In recognition of these complexities and incompatible values Hood (1996) suggests a decision-making and management approach which enables an 'institutionalised "tug-of-war" between incompatible pressures, with a balance tipping mechanism'. To contrast it with the technocratic SPRAT approach Hood labels it the 'SHARK' model ('selective handicapping of adversarial rationality and knowledge') (Hood, 1996, p210). Balance tipping mechanisms derive from procedual constraints rather than by outputs set only by scientific analysis. This more open process is more responsive to outside pressures and makes regulatory decisions less vulnerable to capture by a narrow group, '"distortion" of preferences and "groupthink"' (Hood, 1996, p215). This is in broad agreement with the 'procedual

model', one of the alternatives to the standard model considered by Hermansson (2005). An open procedual based process can be fairer and enable a greater sense of voluntariness and control in risk decisions. While this model has problems – it can for example, lead to a violation of individual rights like the standard model – it does seem to be best placed for enabling risk decision processes to be 'open for critical discussion' and to enable 'an awareness of how our goals frame the decisions and a discussion of what those goals should be' (Hermansson, 2005, p567).

Table 1: A summary of two perspectives of risk

	'Scientific-technocratic'	**'Socio-political' (or 'social constructivist'/'socio-psychological')**
Risk and uncertainty	• Risk and uncertainty are separate concepts; • Risk can be derived from empirical data, quantified, probabilistic analysis undertaken; • Risk defined as 'statistical expectation value of an unwanted event which may or may not occur'; • Uncertainty is when there is insufficient data and knowledge of processes to carry out probabilistic analysis.	• Risk and uncertainty blur and merge in most real situations; • There are limits to the usefulness of quantitative techniques; • Qualitative judgements of risk and uncertainty are required; • Judgements of significance of risk based on a variety of social, psychological and political factors as well as scientific and technical;
Subjective and objective risk	• Subjective and objective risks are separate; • Objective risk exists 'out there' separate and distinct from that in people's minds; • Subjective or perceived risk is that in the minds of people and can be very different from objective reality	• Subjective and objective risk interact; • Objective risk can be affected by subjective risk; • Subjective and perceived risk, even when very different from objective risk, can be just as valid an input into deciding how to respond to risk.
Risk-based regulation and policy-making	• Key decisions made by governmental experts; • Outside input limited mainly to scientific and technical experts; • Stress on 'utilitarian approach' ie, quantitative techniques for risk assessment and economic cost-benefit analysis.	• Stress on qualitative techniques which recognise different kinds of knowledge and understandings of risk and value placed on responding to it; • Democratic decision processes, ie made by ministers with inclusion and dialogue with a wide range of differing actors; • Stress on a rights, societal concerns, and perceptions of risk.
Areas of applicability	• Low politicisation; • High trust; • High consensus; • Relevant knowledge from clearly bounded scientific and technical arenas.	• High politicisation; • Low trust; • Low consensus; • Relevant knowledge derives from many areas and crosses many knowledge and professional boundaries.

3. Risk-based regulation and better regulation in the UK: towards the scientific-technocratic model?

The discourse of risk based regulation is recent, arising in the 1990s and 2000s (Hutter, 2005), but today in the UK, risk based approaches are, in varying ways, key features in the declared aims of regulation in specific sectors and cross sectoral and cross governmental approaches to regulation. To many policy practitioners in business, industry, government and parliament, the aspiration for risk based regulation is so deeply embedded that it seems self evident (and expressed in almost irrefutable language). The 2007 House of Lords report on economic regulators noted, for example, that 'we have not heard, nor did we expect to hear, any argument against the concept of applying resources to the areas of greatest risk' (House of Lords, 2007, p38).

In the general thrusts towards 'risk based regulation', better regulation and its mechanism, the impact assessment, there appears to be a clear striving towards the scientific-technocratic model. Risk-based regulation involves attempts to strictly control regulation and are connected to the deregulatory initiatives and rhetoric of the 1980s and 1990s, the rise of the idea of the regulatory state and the concerns about overregulation. It also involves attempts to inject greater objectivity and transparency into the regulatory process, and thus to legitimise it, particularly in the eyes of business and industry (Hutter, 2005, pp2-3). A key element entails 'a move to a "cost benefit analysis culture" that is a move away from informally qualitatively based standard setting towards a more calculative and formalised approach' (Hutter, 2005, pp3-4). To the extent that this is the case, at the core of the shift towards risk based regulation is a scientific view of risk.

The technocratic view is reflected for example in the Hampton Review, *Reducing Administrative Burdens: Effective Inspection and Enforcement* (Hampton, 2005). This was a major review of administration which noted that the use of risk based regulation was patchy and stressed the importance of adopting risk based approaches across all regulatory areas. Risk assessment is seen to be an essential element of regulation but Hampton concluded that it is not undertaken comprehensively nor consistently. The report noted that '36 of the 63 national regulators in the review's scope use some sort of risk assessment. Only 25 of them, however, include an explicit element of earned autonomy, where good performers are visited less often, or have less onerous reporting requirements'. (Hampton, 2005, p4).

On the 'best risk assessment' the report notes that risk assessment should, inter alia, be 'expressed simply, preferably mathematically' and that

> Data should not be included in the risk assessment unless there is evidence that the presence of the accreditation or certification has a material effect on the regulatory outcome being examined. The judgement on whether a piece of information is material or not should be based on the objective reliability of the information, rather than a subjective assessment of its accuracy in particular cases (p31).

The review does not deny that subjective judgements will be required but this appears limited and grudging. 'There will always need to be scope for some subjective judgement in the assessment – on the quality of management systems, for example – but subjective judgements should inform, not dominate the risk assessment' (p31). Difficult questions about how to deal with the limits of quantitative techniques, different understandings of risk, different responses to risk from different groups of people and how these affect the nature of risk itself, the need for trust and legitimacy in risk regulation are not properly addressed. The report also seems to assume that risk assessors are somehow neutral arbiters of risk.

The discourse of risk based regulation has become embedded in the practice of many sectoral regulators and in some the technocratic approach seems to be the aspiration. One of the most explicit areas in which risk based regulation has been promulgated is the regulation of financial services by the Financial Services Authority.[1] The approach involves assessing the risk (using quantitative data as much as possible – producing 'an overall risk score for each firm') related to firms in the sector and basing the intensity of regulatory intervention on the level of risk.

Better regulation and the Impact Assessment

Risk based regulation is closely associated with the 'Better Regulation' agenda which in principle is about regulatory quality (Radaelli and de Francesco, 2007). Procedures for regulatory decision-making have emerged which focus on the problem to be addressed and regulatory objectives, whether regulation is required, and analysis of costs and benefits and ensuring the purposes of regulation are consistent and transparent to all those on whom it impacts. Principles including transparency, consistency, proportionality, targeting and accountability have been articulated to underpin better regulation and the impact assessment (IA) has been developed as the chief tool.

The IA is a tool designed to inform policy decisions and involves 'an assessment of the impact of policy options in terms of the costs, benefits and risks of a proposal' (Cabinet Office, 2003, p5). It is to be applied to any governmental proposal that impacts on business, charities and the voluntary sector even if the recommended option is not regulatory. According to the Cabinet Office the IA process enables policy makers to: think through the full impact of the proposals; identify and assess alternative options; ensure a meaningful consultation process with a wide range of stakeholders is undertaken; inform EU negotiations; determine whether the benefits justify the costs; and determine whether particular sectors are disproportionately affected (Cabinet Office, 2003, p5). A risk assessment, ie identifying the harm being addressed and the probability of its occurrence, also forms part of the IA.

Studies of risk regulation regimes and better regulation have concluded that the IA is focused more on technocratic processes of regulation. Hood et al (2001, p181), for example, argued that the techniques of better regulation and the IA are more appropriate for narrow 'regulatory craft' rather than for policy problems and regulatory regimes, particularly compliance (though this depends very much on the tractability of the issue and the extent to which it can be reduced to econocratic processes). More specifically, too much has been expected of the IA; it has not lived up to the ambitions nor is it appropriate. IA techniques are arguably also too focused on *ex ante* quantitative 'econocratic' analysis rather than *ex post* review of regime performance (Baldwin, 2005). The limitations of *ex ante* techniques are all the more significant in complex policy and regulatory regimes. Post-implementation review is recognised as necessary in the IA but not in practice it is not clear that it has been adequate (NAO, 2006, 2007).

The practical aspirations for the IA also appear highly technocratic; there is a pressure to quantify without consideration of the limitations of quantification. For example, in an IA checklist (Cabinet Office, 2003), in relation to risk assessment policy makers should 'describe and quantify the current situation' without saying anything about what to do or offering practical guidance when the situation cannot be quantified in any meaningful way. When costs and benefits are analysed and there is uncertainty the only advice is to 'use estimates and ranges'. The latter, however, is little more than an

[1] Speech by M Foot of FSA, December 2000.
http://www.fsa.gov.uk/Pages/Library/Communication/Speeches/2000/sp69.shtml

attempt to create certainty out of uncertainty and can lead to a spurious impression of accuracy. It can also conceal difficult qualitative trade-offs that have to be made in effect there are 'ad hoc political judgements masquerading as technocratic expertise' (Hood et al, 2001, p184). An underlying assumption of using estimates and ranges is that the limitations of quantification are simply about techniques and technologies which can be worked on and improved. There is no recognition of the need to address what the quantification really means, nor what values and assumptions underpin the numbers, nor any extended guide as to how to approach qualitative analysis.

The National Audit Office (NAO), which has undertaken extensive evaluations of IAs, also seems preoccupied with quantification to the detriment of qualitative aspects. While the NAO's evaluations of IAs provide much worthwhile insight into their practice, they are particularly limited on the role of qualitative analysis of costs and benefits. It is true that they recognise that the scope for precise quantification is often limited and qualitative analysis has a role to play. However, very often the NAO appear to suggest that more and better quantification is required rather than considering and assessing the qualitative analysis. For example, in 2001 rather than expounding on good qualitative methods they noted that 'not quantifying benefits may result in an unbalanced policy proposal' (NAO, 2001, p27). Again when there is uncertainty, rather than describe possible qualitative methods they often just emphasise that ranges should be used (NAO, 2004, p30; NAO, 2005, p2), but this can be perceived as quantifying the uncertainty. While sensitivity tests have a role to play, it is not clear how meaningful a quantified range is. This stress on quantitative techniques over qualitative continues throughout the evaluations. In 2007, for example, they noted that departments 'should promote the importance of quantification and a renewed emphasis on analytical techniques' but without a similar statement about qualitative techniques.

The NAO's evaluations do not address qualitative analysis in IAs at any length reinforcing the impression that they perceive them as primarily quantitative and technocratic processes. While the NAO note more than once that 'appropriate' analytical techniques to be used (eg NAO, 2001, p11; NAO, 2004, p2) implying some qualitative analysis, the NAO provide no guidance on what is appropriate analysis. For example, in an IA the NAO have noted that some benefits could not be quantified but they did not say how qualitative analysis should be done (NAO, 2001 p27). The implication is that qualitative analysis is clearly inferior to quantitative and only to be accepted when quantification is evidently not possible (NAO, 2004, p4). They stated that IAs are sometimes 'too discursive' implying that qualitative techniques are vague and insubstantial (NAO, 2006, p3).

Better regulation: 'Risk, Responsibility and Regulation'

In 2006 the Better Regulation Commission published a report *Risk, Responsibility and Regulation. Whose risk is it anyway?* which focused on risk and regulation (BRC, 2006). The essence of the BRC's argument is that there is excessive risk averseness in society, business, industry and government and this leads to overregulation which stifles individual responsibility, and willingness to take risks and innovate. There is a 'compensation culture' a 'culture of zero-risk tolerance' (p7) and 'it appears that our society is often more concerned to reduce or abolish risk than to support enterprise, adventure and self-reliance' (p13). They stress that there 'remains a strong fear of litigation in the UK' even though there is little actual evidence of growing compensation. A 'regulatory spiral' is described which commences with 'the public response, often encouraged by the media, to a perceived risk is usually to call for regulation' (p7). The government responds with ambitious claims that it can solve the problem. However, this usually spirals to more regulation which does not address the problem adequately and creates unintended negative consequences reinforcing the spiral.

The report appears to reinforce the impression that those involved in better regulation at governmental level want a move towards a more scientific-technocratic management of risk. It is particularly dismissive of perceptions of risk or subjective risk. A key underlying assumption is that perceptions of risk and the need to regulate against it, is much higher amongst ordinary people than experts and this leads to overregulation:

> There is a view that the policy dilemma at the heart of risk management is that policies responding to lay-people's perceptions of risk tend towards over-regulation, while policies based entirely on scientific evidence will be seen as an inadequate response and will not be supported by the public (BRC, 2006, p11).

The report also does not acknowledge that the 'regulatory spiral' can work in the opposite direction. Perceptions of the public and media of risk in some areas (eg climate change, road safety) can be lower than the experts' views and regulation proves inadequate. In practice 'type I' (errors of regulatory commission) and 'type II' (errors of regulatory omission) errors can occur (Hood et al, 2001, p181). The BRC it seems is only concerned with type I errors and does not even acknowledge the existence of type II errors.

Much criticism can be levelled at the report. The report makes some big arguments about risk, risk averseness, individual responsibility and regulation yet provides no conceptual basis for these ideas. An uncritical and straightforward scientific view of risk appears to be taken, notably that lay-people's perceptions of risk are irrational and real or objective risk based on the views of scientists is poorly communicated. The BRC's evidence base is particularly limited, much of it is assertion. They select a number of case studies which support its argument without considering those which might be contradictory. It implies that a scientific approach to risk should be taken yet it is not at all scientific in its case selection. There is no attempt to be representative of different cases, nor any attempt to establish just how widespread are the problems it purports.

It is interesting to note that while the negative aspects of a compensation culture and risk averse society is emphasised little evidence of this is provided. They note, for example, the House of Lords report in 2006 which stated that little evidence could be found of a compensation culture. The report notes that the 'total number of legal compensation claims, including claims dismissed and claims settled out of court, has in fact been falling over recent years' though there has been an increase in the value of claims from catastrophic injuries (House of Lords, 2006, p14). In 2000/01 there was a total of 612,000 claims and in 2004/05 579,000 claims. Despite this, the idea of a compensation culture is still a key feature at the heart of their report.

Better regulation, Impact Assessments and policy-making

Interpretations of the relationship between better regulation, IAs and the policy-making process are also indicative of a desire to shift towards a technocratic form of governance. The aspiration of the government, notably the better regulation bodies and the NAO, is that IAs should be fully integrated into the whole policy-making sequence and fully inform each element. However, in its many evaluations of IAs since 2001 the NAO has reported that many IAs are, in effect, retro fitted to decisions that have already been made. An assumption seems to be that this problem is simply a hurdle which can be overcome by departments trying harder to integrate the IA more fully (NAO, 2006, p16). However, it is plausible that there are other reasons, such as the political contestation of issues, for the difficulty of IA integration and the thrust towards integration may sideline the politics and lead to a more technocratic process.

The ideal of IA integration has an underlying assumption that policy-making in practice is a linear and sequential process (Radaelli and de Francesco, 2007, p23-26). However, this 'stages' model, although a convenient heuristic device, provides a limited and distorting view of practice (Hill, 2005, p21). Practice indicates there is significant blurring and overlap between the stages, that policy, politics, administration and implementation are not separate discrete functions. Policy problems, solutions and the politics occur at different times and places, policy solutions can presage problems, while politics can pressurise government to do something when the problem is ill defined and there is no clear solution (Kingdon, 1984; Hood et al, 2001, pp182-183). While undoubtedly the IA can be invoked at appropriate times and places it is questionable whether it as a linear and rational process can be effectively embedded on policy processes which are more ad hoc and sometimes chaotic. It is even more ambitious, if not hubristic, to suggest the IA can overcome these less rational features of real world policy-making (Hood et al 2001, p183).

The central problem is that the IA methodology assumes that a policy or regulation can be separated into a single discrete and rational process, but often they are contested and politicised and entangled with other policies and general approaches to policy-making. As Radaelli and de Francesco (2007, p23) note, the rational-linear model 'breaks down when there are multiple actors, with different preferences and diverse ideas about regulatory quality' and that 'policies are long courses of action (and/or inaction) in which individual decisions are only components of broader and more complex developments'. While the NAO has presented some extended analysis of the relationship between IAs and the policy process, it is not clear that they fully account for the vagaries of real policy-making. They rightly note that policy-making is not often linear sequential process in which IAs can nicely fit. And they note that some policies, notably those to comply with EU legislation, are, in large part, necessarily pre-formed (NAO, 2007, p19). The broader policy-making and political process (in parliament for example) can also impose significant time constraints on policy-making and thus the time and resources spent on IA development.

The problem of the appearance of IA retro fitting might also be less tractable than thought because of connections to pre-existing or pre-accepted approaches to policy-making, for example, the promotion of competition or the use of the private sector. Striving to integrate IA methodology into policy-making might lead to a sidelining of the more politicised and less quantifiable aspects of policy-making, which despite consultation exercises, can militate towards a more technocratic governance.

4. Practice: more socio-political, less scientific-technocratic?

Governmental bodies somewhat removed from the practice of risk regulation, notably Better Regulation Executive, Better Regulation Commission and the NAO, therefore appear to be more focused on the technocratic approach. This section suggests, in contrast, that in terms of ideas of risk and uncertainty and regulatory practice those more closely associated with the practice of regulation tend to take a less scientific-technocratic approach.

Notions of risk and uncertainty

Practitioner governmental bodies rarely take a view which corresponds closely to the scientific idea of risk. The governmental body which addresses risk and uncertainty in one of the most explicit and direct ways is the Health and Safety Executive (HSE) which has the responsibility for health and safety at work. It has made a comprehensive statements on risk policy and regulation and management in its report '*Reducing risks, protecting people. HSE's decision-making process*' (HSE, 2001). While the

importance of the difference between risk (the chance of something happening) and hazard (the potential for harm) is stressed, risk and uncertainty are not simply conceptualised as polar opposites as they are in the scientific view of risk. There is an explicit recognition that risk cannot often be reduced to a 'quantifiable physical reality' (HSE, 2001, p11). The HSE also recognises the importance of different kinds of risk which draw from psychological and social perspectives, for example, the impact familiarity, controllability and voluntariness and their converses have on risk (HSE, 2001, p25).

This nuanced view of risk is also reflected in some of the work of another practitioner body dealing directly with risk, the Environment Agency. The main area of the agency's work is on water management and particularly the risk of flooding. Although it undertakes extensive modelling of risk of flooding and quotes quantitative risks, eg flooding in a particular area is a one in 100 year risk, it recognises that it is impossible to do this accurately and to model the processes fully (Interview, Environment Agency). There is a high degree of uncertainty both in the accuracy of the quantitative techniques, in the understanding of the physical processes flooding and the probability and effects of changes in boundary parameters, such as climate and sea levels.

A rather different type of government body, the Treasury, has also addressed risk in relation to its policy-making. In generic documentation on the management of risk, definitions of risk are similar to those of the HSE. The Treasury notes that 'risk is the likelihood, measured by its probability, that a particular event will occur' (HM Treasury, 2005, p8). This seems to correlate with the scientific notion of risk but it then notes that 'both hazards and risk are often subject to uncertainty. Uncertainty is the condition in which the number of possible outcomes is greater than the number of actual outcomes and it is impossible to attach probability to each possible outcome'. That is, risk and uncertainty are not separable, and aligns with statements made by the Treasury elsewhere (HM Treasury, 2004, p9).

Decision-making methodology

Despite the stress on quantitative techniques by better regulation bodies and the NAO, regulatory practitioners are often more pragmatic and cautious about technocratic methods. Technocratic methods of decision-making stress consistency across different areas and the use of consistent value for life and other risk figures. The pursuit of economically efficient decisions using quantitative cost-benefit analysis is a central technique and is essentially utilitarian is central to technocratic methodology (Hermannson, 2005).

Again the HSE provides evidence of distancing from technocratic methods though not a complete rejection. A central aspect of their approach is that, while quantitative techniques are used as widely as possible, it recognises their limits (p15). It notes that 'the evaluation of management of hazards are evolving to include values that cannot readily be verified by traditional scientific methods' (p,14). In particular, societal concerns and human values require judgement, cannot easily be reduced to numbers nor dismissed as the irrational concerns of the uneducated. Its key criteria for decision-making are in addition to the utility based criterion (benefit of doing something in monetary terms compared to costs) are 'equity-based' (all individuals have the right to a certain level of protection); and 'technology-based' (satisfactory protection is attained when 'state of the art' control measures are adopted) (HSE, 2001, p41). The HSE also stresses the importance of expanding participation (HSE, 2004; HSE, 2002, pp18-19) and that trust in regulators is crucial and there should be greater openness and transparency in decision-making.

While there are differences of emphasis, other regulators, such as the Environment Agency, the rail regulator (ORR), and the energy regulator, Ofgem, follow a similar approach. The ORR for example

notes that decision-making in practice diverges from economic efficiency and cost-benefit analysis (Interview, ORR). This is partly for legal reasons: their statutory duties require them to undertake certain activities and strive for certain objectives which differ from pure economic efficiency. They also state that many decision factors cannot easily be monetised and input into cost benefit analysis. Other factors are considered separately and qualitative judgements are made about trade-offs between different decision factors.

As discussed above, generic governmental bodies concerned with better regulation and the NAO have stressed at length the importance of quantitative analysis while saying little about qualitative analysis. Interestingly regulatory practitioners such as Ofgem, ORR, HSE address the need for qualitative analysis more explicitly in impact assessments. The ORR, for example, has expressed concern that the governmental guidance (updated in 2007) on impact assessments has placed too much emphasis on cost-benefit analysis using quantitative techniques and has noted similar feelings amongst other economic regulators.

The energy regulator, Ofgem, has distanced itself at some length from an overly quantitative approach to impact assessments, particularly the approach advised by the Better Regulation Executive (Ofgem, 2007). It notes that 'we do not propose to use the BRE's template summary sheet on analysis and evidence. We consider that it places too much emphasis on quantified costs and benefits and overplays the likely role of CBA in Ofgem decisions given our statutory duties' (Ofgem, 2007, p4). Later in the same document it notes that while quantitative analysis will be undertaken where appropriate, 'we will avoid spurious accuracy in any quantification where there is little reliable information or where there is considerable uncertainty' (p25). Although not elaborated and illustrated at great length, Ofgem also addresses its use of qualitative analysis in impact assessments more explicitly and directly than the NAO does in all its evaluations of impact assessments since 2001 (Ofgem, 2007, p25-27).

In a different kind of case, the Financial Services Authority has pursued quantitative techniques more than most regulators but has been forced to admit that it made significant mistakes in risk assessments, specifically over the problems of the bank, Northern Rock. As risks in the bank's business model increased, notably its dependence for around 70% of the funding for its mortgages from the international money markets, the FSA did little stimulate the bank to act to reduce the risk (Guardian, 27/3/08, p27). This might, of course, simply have been bad management on the part of the FSA. However, it does raise the question of whether the FSA over relied on rather formulaic and quantified risk assessment processes rather than assess and understand qualitatively the risks in the new and changing global financial environment.

The Risk and Regulation Advisory Council's work programme

It is also interesting to note some evidence of change in the approach by generic better regulation governmental bodies when they engage more directly with the issues. This is particularly notable in the new Risk and Regulation Advisory Council, a governmental advisory body, which emerged from the Better Regulation Commission, and particularly as a result of its 2006 report, risk responsibility and regulation. It has been proposed that the RRAC would 'lead a new approach to key aspects of policy-making … and convene a Forum for specific topics which will then form a community of decision-takers and stakeholders in respect of that topic, drawn from a wider network of people with expertise in risk and regulation' (p3). An initial work programme which would engage with policy makers and external stakeholders ('Better conversations inside government/better dialogue with the public outside') in a process of 'experiential learning, moving away from the former model of published reports and recommendations' (BERR, 2008). The RRAC's initial work programme will consist of a number of

'work packages' in four topics of risk and regulation (BRC, 2008). Four topics which are being considered are: food and superbug scares; animal disease outbreaks; under-pensioned citizens; and obesity (BERR, 2008).

While in many ways this agenda draws on and develops the arguments of the BRC's 2006 risk report, there appears a more balanced view of the issues in risk and regulation and a discernable shift towards the socio-political view of risk regulation. There is a greater recognition, for example, that there are inherent tensions in public risk regulation, the need for an element of equity as well as utilitarian cost-benefit maximisation, and that not getting it right can lead to inadequate protection of the public as well as overregulation, stifling initiative and individual responsibility. It would also 'start to address the public's appetite for risk – trying to unpick the frequent dilemmas between a desire for protection but a rejection of nannying' (BERR, 2008).

They note that 'the policy-making process is often made all the more demanding by the need to seek views from and build consensus amongst a broad and diverse group of stakeholders and to understand fully options and trade-offs (BRC, 2008, p4). They continue 'where public risk is not correctly understood and managed, citizens (in general, but especially those who are already disadvantaged) are not properly protected from high risks' as well as noting 'they are not enabled to take appropriate decisions themselves about risk; they do not experience the benefits of a more entrepreneurial and resilient society' (p4).

The most significant aspect marking a more socio-political approach is the attempt to set up a social dialogue about issues in particular areas of public risk policy which is at the heart of the new process. The aims to involve 'all key stakeholders, internal and external' appear to amount to a shift towards a more inclusive and less top-down decision-making process as opposed to 'relying solely on set-piece reports and formal recommendations' (BRC, 2008, p5). There is also a recognition of the need to bring in a wide range of stakeholders, to get the 'wrong' people in the room, notably those who are normally outsiders to more closed technocratic processes (Macrae, 2008).

5. Conclusion

Evidence suggest that the governmental organisations which focus on the more generalist aspects of better regulation (the Better Regulation Executive and Better Regulation Commission) and to a lesser extent the National Audit Office, have been striving towards a more scientific-technocratic model of risk regulation. They appear to strongly emphasise quantitative techniques, at the expense of qualitative techniques. Although these bodies mention the employment of 'appropriate' techniques, they do not address the question of when qualitative rather than quantitative techniques are appropriate nor address how qualitative analysis should be undertaken.

In contrast the more specialist, 'doing' bodies of government, notably the independent economic regulators, the environment and health and safety regulators stress the technocratic aspects less, notably recognising the limits of quantitative techniques. It is also interesting to note that when the BRC moved from general analysis and critique (BRC, 2006) towards what it would do (BRC, 2008) it shifted clearly towards the socio-political perspective. Central to its 2008 approach (in the guise of the Risk and Regulation Advisory Council) is a 'social dialogue' (BERR, 2008) and the need to move beyond expert assessments of risk and get the 'wrong' people in the room (Macrae, 2008).

Given that practitioner regulatory bodies, particularly the independent economic regulators, are perceived primarily as technocratic bodies, it appears a little paradoxical that they have distanced themselves from an overly technocratic and quantitative approach. There are reasons for this that they cannot escape, notably their statutory duties which militate against taking a one dimensional economic efficiency approach. Nevertheless, it is also indicative that practitioners at the 'coal face' of regulation see more closely the limits of technocratic methods than those more generic government bodies. In this sense, despite over a decade of better regulation initiatives which appear to militate towards technocratic risk decision making, policy and regulatory reality contains a substantial degree of the socio-political approach.

This raises questions about imposing uniform models on different areas of governance, particularly the Regulatory Impact Assessment (or impact assessment (IA) as it has become to be known). It is interesting to note that after almost a decade of better regulation and IAs there remain distinct problems with the IA and a lack of clarity and understanding about its nature. The NAO, for example, conclude from annual evaluations of a range of IAs that many are still retro-fitted to pre-formed decisions and quantitative analysis remains poor. The implication is that bureaucrats and regulators should try harder. However, similar long standing problems with IAs elsewhere, eg in Australia (Carroll, 2006), indicate the problems may be more than local bureaucratic effort, resources or competence. There may be more fundamental problems associated with the technocratic assumptions of the development and evaluation of impact assessments which do not easily align with the realities of policy making. Technocratic methods tend to align more easily with discrete and separable policy areas, and an essentially linear policy-making process which is some distance from reality.

This conclusion raises some key questions about the impact assessment. Is it and should it be primarily a quantitative CBA process? If so its ambitions should be played down and it should more transparently only be an element of a broader and more qualitative decision analysis and process. If the IA is required to play a more central role in the policy process then the qualitative dimensions should be integrated more into the IA.

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