

ESRC SOCIAL CONTEXTS AND RESPONSES TO RISK NETWORK

Current Directions in Risk Research: Reinvigorating the Social?

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Risk is an important topic because of its breadth: it ranges from work that analyses individual responses to that at the societal level, because it includes both accounts of perceptions and understanding and of response and behaviour and because it enables us to discuss social change and how that relates to new directions in the way people live their lives. Risk research draws from a wide range of theoretical perspectives and methodological approaches. This paper seeks to chart out the contributions of some of that work, paying particular attention to sociology and psychology, and to identify current areas of development. It draws heavily on literature reviews in relevant fields carried out by the SCARR network (Zinn 2004a and 2004b, Taylor-Gooby, 2004a) and others (Rohrman, 1999, Eiser, 2005a, Weyman and Kelly, 1999, Lupton, 1999, Slovic, 2001, Boyne, 2003, Loomes, 2005, Pidgeon, Hood, Jones, Turner and Gibson, 1992, Royal Society, 1997, Cabinet Office 2002, Eiser 2005b). The main points to emerge are:

- Different disciplinary perspectives have various strengths and weaknesses in what they can contribute to understanding of risk;
- Recent developments reflect a general move to acknowledge the significance of social and cultural factors more seriously in understanding risk; interestingly, there is a shift towards constructionism and to some extent more social approaches in some work from psychological and social psychological traditions. Constructionism is of course important in sociology, but there is also a tendency towards more subjectivist and some extent realist accounts.
- There is also a tendency to shift away from specific technical notions of risk to approaches situated in the context of a more generalised societal uncertainty.

- Most importantly, current developments in sociological approaches indicate that the ‘death of the social’ may have been a premature obituary. However, the contributions of socio-cultural, governmentality and especially risk society approaches tend to place a sophisticated and nuanced emphasis on the role of the social in the construction of perceptions of risk, but rather less attention in relation to risk response.

This paper reviews the main approaches from sociology and psychology, analyses their relationship and current development, and considers possible new directions to reinvigorate the social.

Sociological Approaches

Although some sociological work is based on rational actor approaches (Coleman 1990, Gambetta, 1988), most sociologists find this approach unsatisfactory in dealing with situations when others are involved (Bloor 1995), and the distinctive contribution from this perspective has emphasized the role of shared ideas and normative frameworks understood in terms of culture. We review three main variants: specifically socio-cultural work, risk society and governmentality theories, and also mention the contribution of systems theory.

The *socio-cultural* perspective was initially informed by the seminal work of Douglas (1985), Douglas and Wildavsky, 1982). Douglas’ key concern is with the distinction between self and others and the social construction of Otherness. The Other is seen as a source of concern and fear, and sometimes of fascination. Her initial work on pollution and on the understandings and rituals surrounding it stressed the significance of boundaries at the level of the individual body and then by extension in the body politic. Dirt is famously matter ‘in the wrong place’ (1969, 2). The transgression of social boundaries is similarly a source of anxiety, and demands moral rules to define the ordering of the social universe: ‘in all places at all times, the universe is moralised and politicised. Disasters that befoul the air and soil and poison the water are generally turned to political account: someone already unpopular is going to be blamed for it’ (1992, 5 ap. Lupton, 1999, 6).

Douglas then traces the shift from a moralism of pollution based essentially on a religious framework of sin to a secular one in which threats are understood primarily as risks. Blame can attach to the victim (the person ‘at risk’) or to the attributed cause of risk (‘blaming the outsider’ – Douglas 1985, 59). The later grid-group model of social organisation reflects the significance attached to insider/outsider distinctions by categorising societies within a two-dimensional space structured by the importance of internal cohesion and the boundaries with the external on the one hand and all other authority structures and cultural constraints on social behaviour on the other. Douglas uses this model in relation to responses to risks from HIV/AIDS for example (1992, 111).

Socio-cultural perspectives drawing on Douglas’ work have been enormously influential. The self/other distinction resonates with psychoanalytic approaches (Kristeva, 1982) and its social applications links to accounts of ethnic cleansing (Tulloch, 2005), of the ideology of Nazism (Bauman, 1991) of responses to migration,

to accounts of the Oriental, to crime (Kemshall, 1997) and to a whole range of issues where risk can be associated with groups defined as other. Current concerns to demarcate refugees and asylum seekers from the rest of the population (Burkhardt 2004) and about Muslim migrants (McLaren and Johnson 2004) can be readily located within this framework.

Socio-cultural approaches have evolved beyond the Self/Other approach to include a wide range of cultural bases for risk perceptions, all sharing the view that cultural assumptions across social groups are powerful bases for ideas about risk and how to deal with it. They offer an important alternative to the individualistic and rational actor accounts of risk responses developed primarily in economics and psychology. Commentators have suggested that the lens that sees most people's risk perception as shaped by an over-arching culture may direct attention away from the extent to which specific and often local cultures and understandings may offer helpful insights into risk responses, just as it undermines any realism in identifying risk (Lupton, 56-7, Wynne et al, 1996, Slovic 2001, ch 25).

More recently, two other approaches to risk which deal with cultural issues from a different perspectives have become influential – risk society and governmentality theories. *Risk society* approaches were inspired by the path-breaking work of Beck (1992). The central theme is to locate risk perception and response within the overall framework of a cultural discontinuity giving rise to a new (or second, or high, or late, or differentiated, or liquid) form of modernity. Modernity became dominant through the interaction of a multitude of factors: the critical and scientific spirit of the Enlightenment, the technological advances of the European industrial revolution, and the social and political changes that followed the development of a working class, the continuing refinement of the division of labour, the painful expansion of an international system resting on sovereign nation states, and the political economy of national economic management in the interests of assured growth.

The important shifts of recent years are associated (Beck argues) with the fact that modern industry produces not only 'goods' (higher and more assured living standards for most people) but also 'bads' (pollution, radiation, climate change and associated perils, vaccine-resistant disease, and in addition a range of social ills such as slump, unemployment, lack of care in old age as traditional informal mechanisms of resilience decline). The pursuit of 'goods' generates 'bads' as unwelcome side-effects, and the production of 'bads' is often intimately bound up with that of 'goods'. These unintended effects become important in eroding the framework of ideas of modernity. Political contests increasingly centre on avoiding the 'bads' (reducing risks) rather than gaining more of the 'goods' (wealth and the fruits of economic growth). Most of these problems can cross national boundaries and affect social groups indiscriminately: 'smog is democratic' (Beck 1992, 36). The outcome is a world risk society beyond the level of the risk management institutions of the nation state.

The key cultural shift among the citizens of risk society is towards 'reflexivity': individuals are conscious of their social context and their own role as actors within it. Managing the risks of civilisation becomes both a pressing issue and one that is brought home to individuals. At the same time however, confidence in experts and in accredited authorities tends to decline as people are more aware of the shortcomings

of official decision-makers and of the range of alternative approaches to problems available elsewhere on the planet. The breakdown of an established traditional order in the life-course provided by work, marriage, family and community leads to greater individualisation and increased uncertainty and anxiety. In this context, the individualised citizens of world risk society are increasingly conscious of the responsibility to manage the risks they perceive in the context of their own lives, and, in this sense, self-create their own biographies.

It is important to be clear that the notion of individualisation contained in risk society approaches differs from that of the 'advanced liberal' individualism associated by writers like Rose (1996) with the growing importance of markets and the 'death of the social'. Individualism in risk society is understood not only as negative freedom, loosening the constraints of a tradition-based social order, but also, more positively as enabling individuals to choose in the context of a pluralisation of cultures and a greater diversity of life-styles in which the vast majority of citizens can participate.

Beck's work is primarily concerned with the development of social institutions – for example, marriage and cohabitation (with Beck-Gernsheim, 1995), and in more recent and ambitious work (globalisation at the most general level (1999a, 1999b). He is currently engaged with other scholars on a major research project on the impact of reflexive modernisation on the transition to a second modernity, which considers shifts at the level of the nation-state, the sexual division of labour, the nuclear family, the differentiation of social sub-systems in politics, the economy, culture and science and the relationship between expert and lay knowledge (Beck, Bonss and Lau 2003, 5). Research within the risk society framework on intimacy and personal relationships also continues (for example, Beck-Gernsheim 2002).

Risk society themes have been taken up in the UK by Giddens, who tends to pay greater attention to the operation of reflexive modernisation at the individual level. This leads to greater emphasis on the 'cultural turn' away from received authority and expertise and towards a citizenship of 'active trust', rather than taken-for-granted deference to accredited experts (1994). He follows through the implications of a critical citizenry and a decline in the capacity of nation states to manage the political economy for the political order in the context of the 'Third Way' politics of New Labour in the UK (Giddens, 1998).

The risk society approach has been criticised both theoretically (Lash, 1993, Boyne, 2003, Lupton, 1999, Elliott, 2002) and on the basis of empirical evidence (Tulloch and Lupton, 2003 132). There are three main directions of criticism. One concerns the cultural transition to reflexive modernity. Rose (1996 321) points out that Beck's claim that 'the prevalence of a language of risk is a consequence of changes in the contemporary existential condition of humans and their world (Beck 1992)' may be misleading. A number of studies (for example, Ewald, 1986) show that risk emerged as a social category and as a concern for government in relation to social insurance as early as the nineteenth century (see also Dingwall, 1999), though Beck might respond that it is the cultural centrality rather than the recognition of risk that is his concern. Further comments address the predominance of an individualised notion of identity and agency, which pays little attention to differences between social groups, in its focus on the declining role of social structures and the importance of personal and active choice. Lash and others stress the significance of culture and an emotional and

aesthetic dimension to life alongside choice in individual action. Others point out that different groups may respond in various ways to the context of late modernity, and that the responsible, confident, self-creating individual may only dominate within a particular social stratum (Rose, 1999).

This controversy has provided rich possibilities for research, which often demonstrates the complexity and embeddedness of the cultural framings which people in practice use in their understanding of concrete risks (for example, Denscombe, 2001; Hobson-West, 2003). There is less work on the significance of institutional factors in framing. In principle, it would be possible to explore the linkages between approaches to the cultural construction of risk at the social level in the tradition stemming from Douglas' work with that of Beck at the individual level, but this does not seem to have generated much research (Tulloch and Lupton 2003, 6). In addition the individualism of risk society has much in common with the methodological assumptions of psychology, but again this area does not appear to be well-developed. One result is that much of the work broadly influenced by risk society perspectives is essentially sophisticated description, charting in detail the different ways in which people as individuals construct the risks they recognise during the course of their lives, an excellent example, being Tulloch and Lupton's own influential study (2003). There is clearly a need to develop understanding of the linkages between the social categories that social theory derived from modernity with those that emerge under the altered circumstances of new modernities.

Governmentality approaches originate in a different set of insights, drawing initially on the path-breaking work of Foucault (1991). Here the central point is that socio-cultural assumptions as well as the direct exertion of institutional authority or physical compulsion can function as part of the apparatus by which power is exerted within a society. Structures of culturally based power can be complex and intersecting, involving axes of faith, gender, employment relations, as well as property, the rule of law, particular democratic traditions and political institutions. They are not necessarily centred on the nation-state. The approach relates to that of political sociology but is much broader in its capacity to include structures beyond the level of formal institutions.

Much of the discussion of governmentality draws on Foucault (1977), Donzelot (1979) and others' analyses of the process by which emergent mercantilist nation states from the 17th century onwards developed new techniques for managing their populations and achieving national goals (see Dean, 1999 18-20). These methods initially included demography and categorisation to assess national resources and assist planning. They were transformed into ever more sophisticated systems of ordering, a whole rationality of government which saw its role as including the reviewing, planning, structuring, allocating and regulating of its own population, and developed the use of audit, judicial discipline, economic management and an apparatus of welfare, education, urban planning and redistributive measures directed an enhanced security during the life-course to achieve these ends.

An important strand is the cultivation of particular assumptions about the risks they faced and understandings of their own role in meeting them among the citizens. Dominant cultural assumptions intertwine with and reinforce state authority. Thus the idea of prudence and self-responsibility among the working class, expressed through

such institutions as the friendly society and the revolving building society promoted both political quiescence and the stability needed to ensure steady growth in the later half of the 19th century (Dean 1999). This was then supplanted by a socialisation of insurance in the 20th century and the development of the welfare state (Ewald 1986, O'Malley 2000). A number of scholars have traced through these processes in the spheres of medicine and regulation of health (Flynn 2002); policing (Ericson and Haggerty 2002), community policies (Rose 1996), mental health (Rose 2002) and elsewhere. One important strand in governmentality approaches analyses the responses of modern states to the disjunction identified by risk society theorists. Here the argument is that the erosion of the official system of nation state management, securing a stable competitive position externally and secure rising living standards internally leads to a new governmentality: recent approaches stress much more the limitations of government provision and the importance of self-activity on the part of citizens in relation to managing their own careers, training and health – dramatised by Rose as ‘the death of the social’ (Dean 1999, 191-2; Rose 1996). Rose develops the point that much current analysis fails to capture this shift, because it is focused primarily at an individual level.

One outcome of the emphasis in governmentality literature on the role of cultural assumptions in reinforcing state projects, particularly in recent analyses of ‘third way’ processes in Europe, where governments face the problem of retreating from social intervention yet directing citizen behaviour to achieve national objectives, is that governmentality is often interpreted narrowly so that it focuses exclusively on what national governments do. Dean’s own study starts out from broad definitions (‘the conduct of conduct’ – 1999, 10 - embracing the ‘government of the self’, to include dieting and religious practice – 17) but by the end of the book it concentrates on ‘historically delimited’ authoritarian and neo-liberal forms of government (ch 7 and 8). In principle however, the approach can include a cultural account of all forms of power.

Governmentality perspectives have been criticised as over-reliant on a top-down functionalism that seeks to explain social developments in terms of the exigencies of government and other power-holding institutions, to see people as inherently manipulable and to contain an under-developed account of agency. One direction for development links together the accounts of shifts at the level of political economy with detailed and nuanced analyses of individual behaviours and responses (see, for example, Kemshall’s work on young people and perceptions of risks in the context of a more flexible labour market (2002) or Hartley Dean on the changing responses to social security regulation, 1999).

A fourth sociological approach to risk which has received little recent attention in the UK rests on *social systems theory*. This has a number of resonances with the earlier structural functionalism of Talcott Parsons. Society is understood as composed of a number of interacting functionally differentiated sub-systems. The problem of risk concerns the way in which sub-systems may (in an increasingly complex society) develop their own internal logics which are at variance with the overall logic of the system as a whole: for example, people are at risk of crime because the logic of a social sub-system concerning economic motives and norms regulating behaviour clashes with that of the property norms essential to overall economic functioning; the operation of economic sub-systems generates externalities in unsustainable

environmental conditions for the whole system. Mechanisms of reconciliation exist, but are typically dependent on trust in others, which an increasingly complex social system finds it difficult to supply (see Zinn's discussion of Japp and others, 2004).

Interest in risk in sociology has generated a great deal of work in recent years, because the issues raised go to the heart of understanding current social developments. All of the three leading approaches argue the significance of cultural issues, although only writers from the governmentality perspective appear to claim that the turn to risk, as a specific way to manage uncertainties, is entirely culturally constructed, typically shaped by a government societal project (Lupton, 1999, ch1). The different accounts of culture rest on concerns about risk issues modelled on basic categories of pollution or comparable normative systems, theories about how particular social changes are reflected in individual consciousness, and accounts of how the exercise of power generates processes which shape social values and behaviour in different contexts. The respective strengths are to do with an approach which explains the universality of risk and the widespread contemporary disjunction between expert and lay understanding; the particular recent salience of risk and of pervasive disquiet about trust; and the shift in official approaches towards greater emphasis on social regulation through expectations and assumptions about individual behaviour. The weaknesses are to do with the reliance on general social categories in socio-cultural approaches and on relatively undifferentiated individualised accounts in risk society approaches which fail to do justice to recent work indicating the specificity, complexity and variety of responses to risk in different micro-social contexts; and, in governmentality, on a functionalism which assumes that demonstration of needs at the macro level explains the development of particular understandings among social agents.

We move on to consider psychological directions in work on risk. Where overtly individual perspectives have been much more influential.

Psychological approaches to risk

The most important approach in mainstream psychology might be termed the '*cognitive/learning*' perspective. The central idea is that humans are more or less rational choosers. This has been fruitful in stimulating research on the influences on cognition and on the information which is grist to the cognitive mill. This framework provides excellent opportunities to develop understanding of how the formal rational action models of mainstream economics relate to the way people think and behave. A second stream of work, drawing on social psychology, might be termed the *empiricist psychometric* approach. This has been particularly significant in an important stream of work on risk perception and behaviour. It uses evidence from questionnaire survey, interviews, experiments and a range of other methods and typically does not rest on strong theoretical presuppositions about the field of study. Recent developments in work from both approaches stress the importance of affect and emotion in contributing to risk understanding.

Renn and colleagues point out (2000, 4) that the account of rational action in economic theory is much more precise and sophisticated than that used in everyday life; the latter refers to any actions which involve conscious deliberative choice, while

the former assumes a rigorous distinction between ends (not the concern of rationality) and means (selected only via rationality), maximisation or optimisation of utility as the over-riding basis for action and a strict methodological individualism. Most psychological work follows the second approach and cognitive research typically admits complex hierarchies of ends and means, multiple motives and cross-influences between actors (Hargreaves Heap et al 1992).

Broadly rational actor approaches understood in this way may be refined into what Weyman and Kelly (1999 14) refer to as 'value-expectancy models', where behaviour is seen to result from assessment of the seriousness and likelihood of outcomes in a sort of individual cost-benefit model (Fishbein and Ajzen 1975). Their meta-review of the literature indicates that associations between perceptions of risk and behaviour are often inconsistent and in most cases weak (1999 15). This finding is echoed in a great deal of experimental and observational research. Loomes (2005) points out in a detailed literature review of work on how people value different goods and bads or hazards and opportunities that rational actor assumptions are difficult to maintain: people are often sensitive to factors that are theoretically irrelevant and insensitive to factors that we would expect to be significant if they were making rational choices. Examples of the first issue are the fact that the starting point or the range of values specified in a question, or chosen at random, or even set entirely by the respondent, has major influence on the value that people will assign to something. Moreover, people will produce widely different estimates of how much they would pay to avoid a particular risk, compared with how much they would regard as appropriate compensation for accepting an exactly equivalent risk, even when they seem perfectly well aware that the risks are equivalent (Dubourg et al, 1997, Bateman et al 2002). The value of a hazard does not seem to be proportional to its size or intensity. Typically, in answer to a question about how much they would pay to reduce a particular risk they will not be willing to pay three times as much for three times the reduction (Jones-Lee et al, 1995).

These issues have been addressed in four main ways. An enormously fruitful stream of work derives from the insights of Kahneman and Tversky (1974, see Kahneman, Slovic and Tversky 1982). These authors build on the long tradition of experiments in economic psychology which demonstrate that people often make mistakes in evaluating and comparing risks (Hargreaves-Heap et al, 1992, ch 2) through a series of experiments which enable them to identify a number of common deficiencies in recognition and understanding of risk. These 'cognitive illusions', are, broadly speaking, analogous to the perceptual distortions we ordinarily experience and learn to compensate, for example, in perspective, parallax motion and mirror inversion. The central claim is that people develop convenient mental strategies or 'cognitive heuristics' in order to facilitate evaluation. These include: availability bias (the tendency to overestimate the significance of rare but striking factors), immediacy of effect (results that follow causes in time tend to receive greater attention in thinking about risk than more remote ones) and loss aversion (the damage at a loss tends to be weighted more highly than the benefit at an exactly equivalent gain). Cognitive heuristics shape risk judgements.

A second stream of work draws on learning and social learning theory. Eiser (2005a) explores the range of problems that result from the fact that a successful risk learner needs to gather appropriate feedback from the environment on when to pursue or not

to pursue a course of action, and to be able to modify behaviour fittingly. Learning theory deals with how we assimilate information from practical situations, while social learning theory (Mischel and Shoda 1995) extends this to the experientially-based views that people acquire about the social environment in which they live and how they can handle it with confidence. In practice, many of the risk situations with which we deal provide poor feedback. For example, most of the time speeding drivers reach their destinations safely – and learn that the risks associated with speeding don't apply to them (Eiser 2005 23). A similar learning issue may arise in relation to trust in others. Much of our contact with significant professionals (lawyers, doctors) is typically brief and limited and we find it difficult to acquire good information on their competence – in fact failures may stand out and attract more of our learning attention than does the ordinary continuation of normal business, so trust is always vulnerable (22).

A third approach examines cognitive processes more directly and develops theories of 'mental modelling'. These assumed that critical gaps in cognitive understanding of risk exist in the minds of the lay public, which explained non-rational responses to evidence. The methods used are often innovative, involving free association and other ways of eliciting beliefs (Weyman and Kelly, 1999, 11). These approaches are effective in identifying the factors which influence how people think about a particular issue. Much of the work is concerned to point out deficiencies in lay understanding, but the approach can also be applied to expert mental models. Pidgeon argues that the approach offers possibilities for development in approaches to risk provided it remains agnostic as to the superiority of any particular model (Pidgeon et al, 1997, 121-2). From this perspective, the mental model may start to resemble the socio-cultural assumptions discussed by sociologists.

A fourth recent approach argues that the cognitive-learning perspective provides a limited account of how people understand risk and make risky choices; emotional and affective factors are also significant. Experimental work indicates that in some contexts individuals can be understood to use emotionally based judgements to supplement or supplant rational judgement in assessing situations or making choices, particularly under time-pressure or under uncertainty (Loewenstein et al 2001, 2003, Forgas 2003). Affect can also contribute to judgements of trust in more general reflective contexts concerning public issues rather than immediate personal choices (Frewer et al, 2003; Eiser, Miles and Frewer, 2002; Poortinga and Pidgeon, 2004). This insight offers the potential for building on cognitive approaches to explain some of the puzzles in the evidence.

The first three solutions to the anomalies between the predictions of a broadly rational-actor/cognitive approach and experimental evidence point out some deficiency on people's grasp of the issue. This may derive from the inappropriate use of cognitive heuristics, the imperfections of learning especially in complex social situations or the weaknesses of mental models. These may plausibly be explained in terms of an evolutionary model that leads to human cognitive processes that are imperfect, especially in dealing with complex social situations in which they did not develop. The co-existence of affective and cognitive approaches which may overlap or distort risk cognition may also be understood in this way – arguably, humanity evolved in circumstances where an immediate affective response to danger rather than a slower deliberative one may well have been helpful (Epstein, 1994). Loomes,

however, takes the argument one stage further by arguing that affective issues are best understood not as a distortion of the cognitive process, but as simply an unavoidable component in how people make risky choices.

He draws on evidence that particular aspects of an experience may have a disproportionate effect in colouring perception of the whole. For example, Kahneman (2000) discusses the way in which the value (positive or negative) of some previous experience is significantly influenced by what happens in the last few minutes rather than during the whole. Correspondingly, the benefit anticipated from some new development in someone's life (for example, winning the lottery) tends to be overweighted, because the scale of the transition rather than the duration of the new state plays a disproportionate role in the valuing of the outcome. Contextual framing operates in a similar way (Loewenstein and O'Donoghue 2004). Kemp and Maxwell (1993) and Hsee (2000) show that the context in which something is set rather than intrinsic factors make a substantial difference to how it is valued. In one sense this is similar to the problem that where the value chosen as the starting point on a scale and the range of values one sees as available (the 'modulus' employed) has a major impact in influencing the way one values something. The point is that people have to carry out some such process in arriving at a valuation of an experience. The cognitive/affective model suggests that they are typically influenced by particular impressions of the experience (perhaps the brief end-period of something spread over time or the context in which a particular object is set) in doing this. However, there is no available basis for pure objective assessment, independent from context and framing. This is just how people are. Redesign of an experiment may lead to different valuations by varying context or the salient features, but that does not alter the basic point.

A strong strand in the mainstream of psychology understands risk perception and response in terms of the limitations in cognitive learning and modelling capacity of people understood as creatures endowed with rationality and learning capacity developed through evolution and seeking to manage risks within their environment. The model of frail, enquiring but in principle correctable humanity that results is further challenged by a new research direction that points to affective factors as playing an important role in relation to risk. One strand in this work suggests that affect is intrinsic to risk perception and response: it is not so much that people make mistakes for understandable reasons, as that they deal with risk in a particular way, and this is something with which we must live.

We move on to consider the contribution of social psychology.

Psychometric modelling of risk uses a number of quantitative measures (questionnaire studies, magnitude estimation, numerical scaling, attitudes studies). It assumes that 'risk is subjectively defined by individuals who may be influenced by a wide array of psychological, social, institutional and cultural factors...many of these factors and their interrelationships can be quantified and modelled in order to illuminate the responses of individuals and their societies to the hazards that confront them' (Slovic 2001 xxiii). It is sometime distinguished from the cognitive rational actor approach as dealing with 'expressed preference' (Slovic, 2001, xxii), as against the 'revealed preferences' of economic terminology (Starr 1969). The evolution of psychometric work may be traced in three main phases. Initial work on the

acceptability of risk indicated that most risks could be readily located by individuals within a two-dimensional factor space. The dimensions concerned on the one hand dread – the extent to which the consequences of the risk provoked fear – and familiarity – the extent to which the risk was seen to be known and controllable or simply uncertain (ch 5 98, see also Rohrmann, 1999; Renn, 2005).

Further research demonstrated the complexity of attitude structures both in terms of differences and sometimes conflicts between different groups and in terms of patterns of consistency and interrelationship in attitudes. The former issue led to work which demonstrated substantial differences by gender, ethnicity, nationality and social class (2001, xxv; Rohrmann, 1999). An extension of this approach produced regression models in which ‘world-views’ – ‘orienting dispositions’ associated with trust, egalitarianism and commitment to democracy associated with different social groups – were seen to influence risk perceptions and responses. This work offered a way of introducing in embryo cultural factors into accounts of risk (see for example Dake 1992; Rippl, 1999).

In the latter area, the most important strand of work in explaining attitude structures concerned *risk communication*, seen by some as an emergent disciplinary area (Pidgeon et al, 1997, 118). Some risks were identified as carrying stigma – a burden of identified and sedimented dread that led the risk-factor to carry a greater weight of fear of risk than could be otherwise understood (Pidgeon, Kasperson and Slovic, 2003). The work also contributed to mental modelling approaches by providing quantitative information on the components of the models held by particular groups. More recently the two approaches, resting on the characteristics of social groups and culture and the characteristics of different risks, have been combined. The *Social Amplification of Risk Framework* (Pidgeon et al. 2003) offers a framework which incorporates sources, channels and flows of information and the role of culture and of social institutions in reinforcing or attenuating particular risk ‘signals’ to provide accounts of why particular hazards are identified as risk and how communication about those hazards impacts or fails to do so on the larger society (14).

This model essentially offers a framework into which different psychological and sociological approaches can be located. It has been criticised for failing to offer any additional contribution to theorising – particularly in terms of weighting the contribution of different theories; for failing to recognise the complexity, interaction and, in some cases, conflicts between different theories – for example, the extent to which a cultural account of how risk communication is amplified across some groups but not others and an individualistic account of the role of experience and cognitive heuristics generates risk perceptions across all individuals; and for failing to accommodate adequately social accounts of how the social conventions and assumptions summed up, for example, in Bourdieu’s notion of ‘habitus’, facilitate or undermines particular risk perceptions (Murdock et al 2003). Nonetheless it is an ambitious attempt to produce an inclusive model even if the model has failed to attract much developmental work elsewhere.

Recent discussions of a possible ‘affect heuristic’ (see previous section) have been influential in recent developments in psychometry. Alhakami and Slovic (1994) produce evidence to indicate that positive affect is associated with perceived high benefit and vice versa. Slovic has combined affect and cognitive heuristics in a

tentative account of risk perception and response that sees both as operating in concert, leading to a further layer of complexity in risk judgements. For example, the effectiveness of cigarette advertising even on groups who are aware of the deleterious health effects may be partly attributed to the success of commercial interests in associating cigarettes with positive affect, which over-rides the concomitant cognitively-based choice to quit (Slovic et al, 2004).

Psychological research reflects the rather different directions of the more cognitive and experimental, and more social psychological psychometric approaches. Both have produced effective and fruitful traditions of work on risk. In general the trajectory of findings and analysis has led researchers to pay less attention to the importance of rationality and cognition and more to affective and (to some extent) cultural factors.

Comparing and Combining Approaches to Risk

Approaches to risk have been categorised in a number of ways of which two are probably most prominent. At a metaphysical level, different theories carry different implications about the extent to which risks are real or socially constructed (see Lupton, 1999, 33-5, Rosa, 2003 50). At a social level, the key distinction is between a nominalism or individualism that sees the bearers of risk perceptions as individual and a collectivism that sees them as irreducibly social entities (Renn 2005). Figure 1 (developed from Renn 2005) locates the various theories in relation to these dimensions.

Risk theories may be ranged along a continuum from realist through weak to strongly constructivist. Most technical and scientific theories of risk as realist in their equation of risks with objectively existing hazards, an approach which implies that it is possible to distinguish between real and imaginary sources of risk, thus, in principle, privileging expert accounts (although always open to the possibility that particular expertise may itself be subject to expert correction). Cognitive/learning approaches typically fall into this category, driven by the assumptions that risks are real and concerned with the factors that affect how we perceive or misconceive them. Constructionism enters to the extent that social factors may, for example, influence the mental modelling that generates a particular prioritising of risk. Variants that suggest affect plays a role point to a further factor in construction. To the extent that the influence of affect on risk assessment is seen as unavoidable, the degree of constructionism become stronger. Psychometric approaches start out from an empiricism that is explicitly agnostic on the realism of risk, although a degree of realism is usually assumed (Kasperson et al 2003). As culture and world-view enter the discussion, construction becomes more important.

Sociological approach imply construction since culture plays such a strong role in these accounts. Risk society is seen as weakly constructionist: social change is real and generates real hazards in peoples' lives. The interesting issues centre on the cultural shifts that lead people towards reflexive individualisation of their responses, and, in much of Beck's work, in the institutional shifts that result. Socio-cultural approaches involve a stronger constructivism, in that hazards are re-interpreted as the property of self or other, in-group or out-group and this is what determines risk

response. Some of those whose work is influenced by risk society approaches suggest that socio-cultural factors and thus a stronger constructivism operates within the general model (Bauman 1991; Tulloch and Lupton, 2003). The socio-cultural work of Lash and others stresses the importance of group factors in moral and aesthetic judgements of risk (2000). Finally governmentality approaches posit risks as entirely constructed, the product of social processes which enforce particular power relations often in current state-focused work a particular government project (Lupton, 1999).

Approaches may also be located on an individual-social dimension. Rational actor and technical/scientific approaches conceive of risk perception and response in terms of individual actors. Similarly, cognitive heuristics, learning processes, modelling, and above all the influence of affect may lead people to construct particular interpretations of risk, but all these factors are seen to operate at an individual level, apart from social learning theories. Variants of psychometry, which include culture as world-view, tend more towards taking the social seriously. Sociological approaches typically rest on collectivist accounts of culture, although risk society models emphasizes the individual level in apprehension of and response to risk more strongly.

The framework brings out one of the features of risk debate. As one moves from right to left the central focus of research and the implicit definition of risk shifts from particular technical approaches to approaches that see risk as more socially pervasive, as uncertainty. Thus scientific/technical, rational actor and psychometric accounts of risk start out from a definition interpreting risk as the seriousness of a particular hazard weighted by the likelihood of its occurrence (Hargreaves-Heap et al, 1999, Boyne 2003, ch 1). However, more cultural approaches see risk as something that is endemic in any system of social ordering, of establishing a moral universe, and move towards the notion of uncertainty in their accounts. Risk society models dissolve the distinction made by Knight (1921) and others between measurable risks and unpredictable uncertainties. A central tenet is that in late modernity the likelihood of issues where the outcomes are uncertain but which cannot be handled through traditional methods of risk management (relying on nuclear family support; insurance) is very much greater. The governmentality approach interprets risk as a social construction. The most important recent movement is from an actuarial and insurance logic which saw risks as distributed in such a way that pooling was possible, to one which sees them as widespread and unpredictable, hence the shift towards individualisation of responsibility.

Corresponding to this, as one moves vertically in the chart, from realist to constructionist approaches, there is a shift from a situational and specific conception of risk, predominating in much of the risk management literature, to one of risk as general and pervasive, a defining characteristic of our social formation.

The chart shows the direction of recent developments in work on risk. Two points stand out:

Psychological and sociological approaches to risk have developed, but remain distinct: not surprisingly, sociology places much greater stress on social construction and institutional frameworks and on social factors.

In general there is movement in different directions in different areas. While technical and rational actor models and some varieties of cognitive approaches retain their position as individualist and realist, there is a movement among cognitive and psychometric approaches to pay greater attention to constructionism, and some developments which stress social factors. Movement is mainly upwards and slightly to the right. Conversely on the right half of the chart there has been greater interest in the cultural and collective transmission of power in the governmentality framework, but, at the same time, in the more individualist and more realist risk society approach. Movement is both upwards and downwards but slightly to the left.

Implications for Analysis of Risk in Sociology

One outcome of these developments is that while there is increasing sophistication in the analysis of risk perceptions and responses, certain themes receive attention and others are neglected. While much work pays attention to cultural context and the way discourses may frame risk, risk responses are typically not themselves set within a social context.

Risk society approaches stress the social construction of the individual as risk actor, detached from the constraints and structures of a traditional normative framework. One problem is that it becomes difficult then to place due weight on the individual's social location in analysing risk responses. The vulnerability of different social groups to hazards varies, from employment to morbidity, from homelessness to workplace stress, as a substantial stream of work at the social policy end of sociology points out (Taylor-Gooby 2004). Similarly, social position bears a strong influence on resilience in responses to risk. Higher social groups generally have access to superior material, cultural and social capital resources to tackle risk problems. Thus they are able to recover former income positions after experiencing problems like single parenthood or unemployment or an accident more quickly than other groups (Rowlingson, 2003; Taylor-Gooby, 2001). This is independent from the extent to which individuals may experience risk or a pervasive sense of uncertainty affecting their social life. Much of the risk society literature fails to take into account social factors that play a part in shaping responses to risk.

One outcome is an emphasis on an individualisation at the political level. Giddens develops a notion of 'dialogic democracy' (1994, 117), in which all interests can in principle be represented in decision-making, drawing on Miller (1992), in some ways reminiscent of Habermas' 'ideal speech situation'. However, factors related to social location which appear to influence current levels of participation in voluntary work, school governorship and political life, together with the decline of the more traditionally working class institutions (per-eminently trade unions) are not included (Hall, 1999; Grenier and Wright, 2005). In some variants of risk the extent to which individuals are left free from official intervention in managing risks becomes a central theme (Furedi, 1997, 2001, 2003).

Socio-cultural traditions point to the psycho-analytic roots of a fundamental self-other distinction in the intimate growth of self-consciousness. The family and intimate relations are important as part of a social context in the development of individual perceptions. This has stimulated interest in the language which people use to talk about risk, leading to narrative approaches (Henwood and Pidgeon, 2001) and a focus

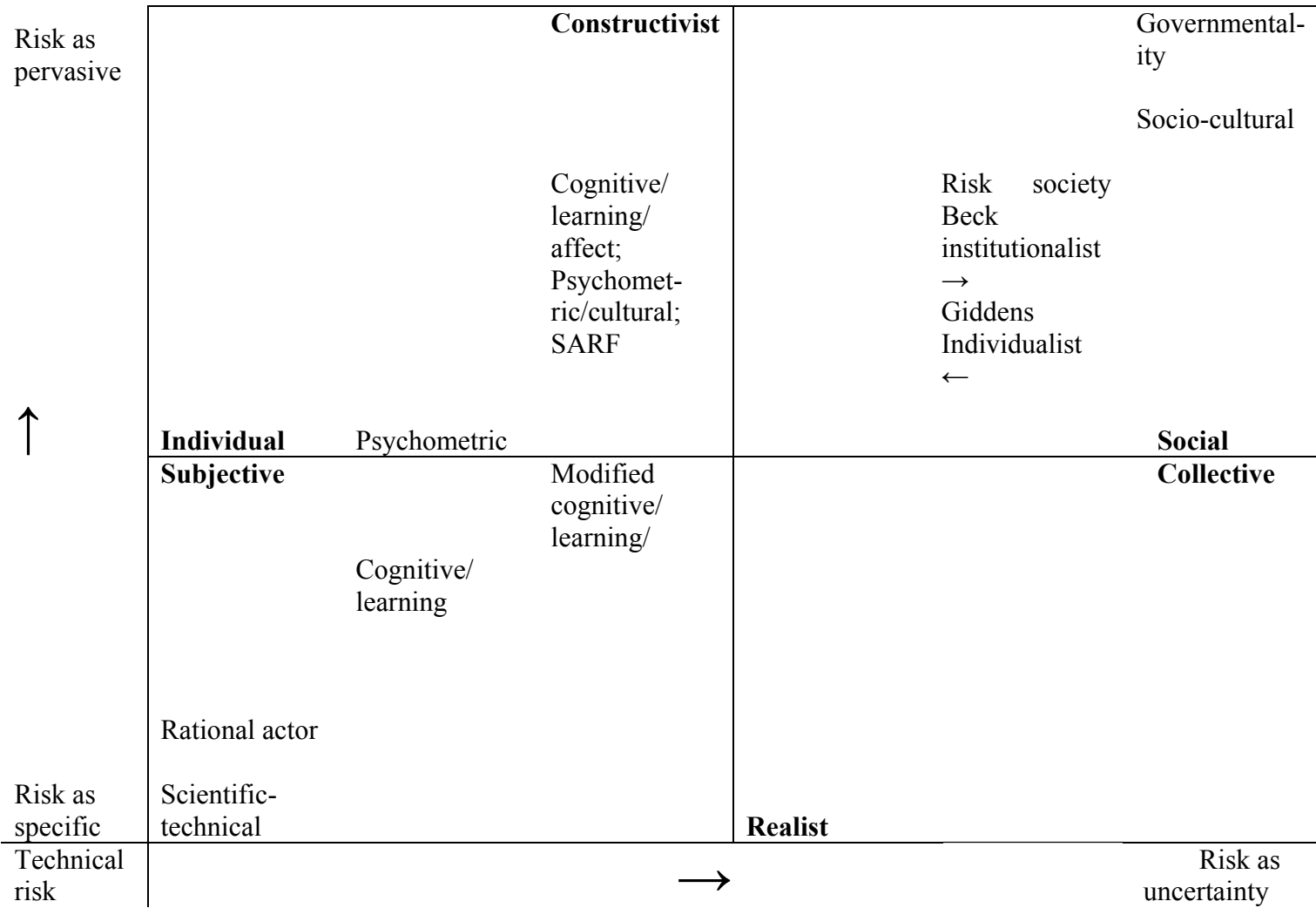
on discourse: 'identifying the dominant discourses that inhere around risk in the talk of experts and lay people and give it its meaning is a way of gaining access to the social and cultural frameworks in which we are interested...we are drawing on the poststructuralist understanding of the importance of language in helping to constitute meaning and shape subjectivity.' (Tulloch and Lupton, 2003,12-13).

A greater stress on the importance of experience during the life course leads to the use of biographical and narrative methods to explore the way such factors influence people's current ideas (Satterfield, 2001; Chamberlayne et al, 2000; Zinn, 2004a). The outcome is an approach that again focuses on the construction of individual risk perceptions and pays less attention to more material factors in shaping responses. This approach also stresses the way in which past experience influences current responses (resilience, resistance or acquiescence) in the face of risks. The governmentality approach, since it deals with the social construction of power, rather than social factors involved in responses to the exercise of power, leads to a similar position, but without the historical dimension.

These points indicate that the 'death of the social' (Rose, 1996) is indeed an important force in current accounts of risk. Social factors receive considerable attention in accounts of the cultural roots of power and the transition to a new modernity. However, there is less attention to how such factors affect responses to risk. A number of scholars have pointed out that one of the limitations of current political discourse is that it individualises social issues. A reinvigoration of social analysis of risk behaviour would contribute to this.

Table 1 - Summary: Major Approaches to Risk Perceptions and Responses

	<i>Orientation</i>	<i>Strengths</i>	<i>Critique</i>
<i>Technical-scientific</i>	Communication expert to lay	Simple	Ignores role of culture and context
<i>Rational actor developing to include affective factors</i>	Individual choice behaviour	Economical, clear	Limits of RA, social context of action
<i>Psychometric developing to include cultural factors</i>	Empiricist	Openness	Limited to what can be captured by method
<i>Risk society</i>	Shift to second modernity	Captures contemporary uncertainty/pervasiveness of risk issues	Undifferentiated individualism
<i>Socio-cultural</i>	Foreground culture	Apprehension of risk as fundamentally non-rational – thus pervasive and non-expert	Difficult to capture social shifts; complexity and contextual nature of cultures
<i>Governmentality</i>	Development of the state and of cultural systems of power	Foregrounds power relations (distinctive in modernity)	Downplays action frame of reference; top-down model of politics



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