Governing Environmental Harms in a Risk Society

Vaughan Higgins and Kristin Natalier

Introduction

The definition and governing of environmental harms has emerged as a key site of controversy in recent sociological writing (see Adam and Van Loon, 2000). Ulrich Beck's *Risk Society: Towards a New Modernity* has become a touchstone for many of those engaging with these issues. The original text, published in German as *Riskiogesellschaft,* developed a theory that moves beyond a description of risk to trace the contours of an altered modernity – a risk society. Beck is credited with developing a "highly original formulation of the theory of risk" which is more sophisticated in its application than other sociological approaches (Elliot, 2002: 299; see also Adam and Van Loon, 2000; Irwin, 2001). Nevertheless, his work has been the subject of considerable debate, and has highlighted ongoing tensions between so-called 'realist' and 'social constructionist' perspectives on the definition and governing of risk.

The purpose of this chapter is to examine critically the 'risk society' thesis and the questions it raises concerning the definition and governing of environmental harms. We first outline the main features of Beck's approach to risk. The limitations of this work are then discussed drawing on social constructionist concepts to highlight the main areas of debate. Finally, we provide a critique of both realist and social constructionist perspectives on risk using the post-structuralist analytical frameworks of governmentality and actor-network theory. We argue that these two latter frameworks represent a coherent way of 1) moving beyond the dualistic objectivist/subjectivist thinking that characterises both realism and social constructionism, and 2) demonstrating the complex ways in which environmental harms are co-constructed as risks.

Background to the Issues

To understand how environmental harms assume prominence as risks it is useful to first consider Ulrich Beck's (1992) seminal work, *Risk Society: Towards a New Modernity.* While Beck was by no means the first sociologist to write about the nature

and management of risk, his work has had a major influence in environmental sociology and, therefore, provides a key starting point in exploring the sociological literature on the production, definition and responses to ecological harms.

Emergence of the Risk Society

Risk Society is a theory of modernisation. It describes a shift from classical to reflexive modernisation. For Beck, classical modernisation is characterised by a politics centred on material progress and the distribution of wealth and prosperity ('goods'). However, the taken-for-granted assumptions of progress have recently been displaced by a concern with the negative environmental consequences of development ('bads'). Risk has become the organising principle of late modernity: individuals and institutions focus on the management, allotment and avoidance of potential danger. These processes are part of other substantial historical shifts: individualisation; the declining significance of class; the rise of new social movements and the critique of expert knowledge.

By Beck's (1992: 21) definition, risk is "a systematic way of dealing with hazards and insecurities induced and introduced by modernization itself". In other words, risk is a consequence of societal attempts to intervene in and control environmental hazards. It demands a constant engagement with the future and in so doing, it shapes the present: it is "something which has not happened yet, which frightens people in the present and therefore they might take action against it. Risk is not catastrophe; if catastrophe happens it is a fact, an event" (Boyne 2001: 57). As such, risk society is not defined by oil spills or nuclear meltdowns – it is defined by their possibility, and how we might, as a society and as individuals, respond to this potential.

Beck draws a sharp distinction between incalculable hazards and calculable risks. People have always faced hazards such as illness, death and social upheaval. However, the risks of late modernity – Beck uses global warming, the greenhouse effect and the thinning of the ozone layer, nuclear technology and acid rain as exemplars – are unique. Contemporary risks are set apart through:

- Origins – Danger and disaster once struck – and were avoided – through fate, or the will of "gods, demons or Nature" (Beck, 1992: 98). In late modernity, risks are generated by society. They arise through the failure of social institutions to control

the risks that are inherent to them. Chemical spills or radiation poisoning are more than a by-product of industrialism and capitalism; they are consistent with the logic of industrial capitalism and modernisation.

- Scope and effect – The world today faces the possibility of apocalypse. Even those risks that fall short of the complete annihilation of humankind, or the environment, display an unprecedented reach. They transcend time – their effects are not limited to present generations, and indeed, may only be fully experienced by people who have not yet been born. These risks are global, extending far beyond the surrounds of any one factory that might produce them; they cannot be limited to the territory of a particular state. Due to the 'boomerang effect', those who generate risks cannot export them elsewhere and escape them – the threat will rebound. Rich people are no more able to protect themselves from some of the key dangers that define the modern world than are the poor: "Nuclear contamination is egalitarian and in a sense "democratic". Nitrates in the groundwater do not stop at the director general's tap" (Beck, 1992: 109). Further, the risks have the potential to "induce systematic and irreversible harm" (Beck, 1992: 22). This harm is often incalculable and can be neither insured against nor compensated for – there is no possibility of returning a person, culture or place to the state it was in before the event occurred. In short, instrumentality and rational control, fundamental organizing principles of modernity, have been undermined in the emerging society.

- The difficulties of identification – Smoke billowing from factory stacks was once a visible indication of the destructive environmental effects of development. In effect, no specialist knowledge was needed to identify them. Today, people cannot rely on their senses to foresee or avoid danger. A 'cloud of radiation' does not look like a cloud, nor can we cannot look up into the sky, see the 'ozone hole', and walk around it. Risks are invisible, they cannot be smelt, heard, touched or tasted; for Beck, they are 'unknowable' to lay people.

The Role of Expertise

Given that risks are undetectable, people are reliant on experts. This is an ambiguous and ambivalent relationship. On the one hand, risks are not detectable by human senses and so science is necessary in order to identify the existence of risk. On the other hand, the legitimacy of science is increasingly challenged. The rules and proofs of science are at odds with the incalculable nature of risk, its systemic sources and global and temporal reach. It can be difficult to establish a relationship between an adverse health or environmental outcome and the practices of any one individual, factory or corporation, at least to a level that meets recognised scientific, legal or statistical standards of proof. This has the effect of rendering monitoring and prosecution difficult. However the demands of the institutions developed in simple modernity do not fit with people's lived experiences as:

> …people themselves become small, private alternative experts in risks of modernization. For them, risks are not risks, but pitifully suffering, screaming children turning blue. …The 'blank spots' or modernization risks, which remain 'unseen; and 'unproven' for the experts, very quickly take form under their cognitive approach (Beck, 1992: 61).

In Beck's risk society, expert knowledge is relied upon, critiqued and appropriated in a "dialectic of expertise and counter-expertise" (Beck, 1992:30).

Re-definition of Social Progress

According to Beck, new risks are the logical endpoint of social, capitalist and industrial processes. In simple modernity, people believed in progress, and saw its achievement through the development of more efficient markets, advanced science, and appropriate technology. Any problems in the environment would be addressed through the very science and technology that contributed to them in the first place. Beck terms this 'organised irresponsibility' whereby society endangers itself by failing to acknowledge and address the source of risk in its own social and institutional systems. The few who sounded warnings were retrograde nay-sayers or fear mongers.

However, the consequences of a society built upon science and industry are no longer passing un-noticed: a reflexive risk society – more commonly referred to as "reflexive modernization" in Beck's text – has emerged. People and institutions are suspicious

of industries and earlier modes of production and management (Boyne, 2001: 58). This creates new political alignments. Class has lost much of its relevance in a post-scarcity society, whereby most of our material needs are now met. Any lingering inequalities are reframed with reference to the strategies, success and failures of individuals – they are no longer ascribed on a group level. A consequence is that an environmental 'sub-politics' emerges where people organise collectively around new risks rather than previous socio-economic allegiances. These concerns build coalitions between individuals who may not have otherwise worked together. Actions are no longer bound to traditional political processes and peoples' concerns are no longer centred purely upon the ideals of progress – either techno-scientific or social. In a risk society, unprecedented risks are interlocked with significant social change.

Key Debates

Risk Society has become one of the pre-eminent sociological texts; its sweeping scope and impassioned critique of environmental crises have struck a chord with the public and sociologists alike. However, academic engagement with this work has revealed a series of shortcomings. The following section explores the debates associated with this concept, and uses the criticisms of Beck's work as a starting point in exploring some of the broader tensions between the dominant perspectives on environmental risk: realism and social constructionism.

Realist vs Constructed Notions of Risk

Although his conceptualisation is not always clear, Beck is often criticised for adopting a realist definition of risk that argues environmental threats and their material outcomes exist independently of social perception or cultural interpretation. As Dean (1999: 136) comments, Beck assumes that the reason why risk is such a central feature of modern existence is because real riskiness has increased and has "escaped the mechanisms of its calculation and control". For Beck, these effects are real, existing irrespective of the absence of scientifically mandated relationships or legal definitions of causation. While this demonstrates the serious and concrete nature of the risks faced by modern societies, scholars such as Elliot (2002) note that Beck's theory is overly rationalist and neglects the subjective ways in which risks are constructed; in sum, "it cannot grasp the hermeneutical, aesthetic, psychological and

culturally bounded forms of subjectivity and intersubjectivity in and through which risk is constructed and perceived" (Elliot, 2002: 300-301). These comments are consistent with a social constructionist perspective that focuses on the interpretive frameworks, cultural assumptions and forms of contestation that create or conceal environmental problems and issues.

According to a social constructionist approach, risks are socially defined and created rather than simply objective phenomena waiting to be discovered. Hannigan (1995: 96-100), drawing on the work of Hilgartner, argues that there are three major conceptual elements in the social definition of risk:

- An object deemed to pose a risk – to assume significance as a risk, an object needs to be defined as such. Often there may be competing claims over the nature of the object as risky.

- A putative harm – this involves debate over the harmful effect of the risk in question. Again, the harm involved can be the subject of contestation and debate. For example, forest fires might be seen as a cause of destruction, but can also be viewed by ecologists as a natural means of renewing woodlands.

- A linkage alleging some causal relationship between the object and harm – scientific and statistical evidence is frequently drawn upon to 'prove' a link between the object and harmful (or lack of harmful) effects. However, the layers of proof are multiple including not simply scientific, but also legal and moral claims. As a consequence groups, such as those opposed to genetically modified foods, for example, have been able to use moral arguments to mobilise public opinion and contest what they see as tampering with nature.

Nevertheless, a social definition of risk has been criticised by realists such as Dunlap and Catton (1994) who argue that it fails to say much about the 'reality' of environmental harms. In their view, environmental sociology has an obligation to address ecological problems in practical rather than de-constructive terms; as an intellectual approach, social constructionism provides no basis to do so (see also Benton, 1994; Martell, 1994). However, Burningham and Cooper (1999) point out that the debate between realism and constructivism is centred on a straw person. It is not social constructionism per se that is attacked, but rather, 'strong social

constructionism', which does not allow for the existence of a reality outside of discourse or cultural definitions. Much of the work in environmental sociology could better be termed 'mild or contextual constructionism'. This approach, advocated by sociologists such as Hannigan (1995) and Capek (1993), focuses on the ways in which people interpret environmental problems, highlighting the contested nature of particular claims, but proceeds on the assumption that material and often serious risks exist independently of any group's claims. Nor is a realist approach so strict it shares no ground with constructionism; the changing and contested nature of scientific knowledge, in particular, is regarded as relatively problematic in sociology generally. Thus, Irwin (2001) suggests that it is more accurate to talk of 'constructive realists' and 'real constructivists'.

Risk Society vs Socially Constructed Risks

The divisions between 'lay' and 'expert' or 'scientific' knowledge has created a further area of debate. Within Beck's reflexive modernisation thesis, debates over risk occur between experts and counter-experts; any non-institutional critique derives from personal experience. Wynne (1996) argues that this dichotomy demands reconsideration. His account of the interactions between English sheep farmers and scientists in the wake of the 1986 Chernobyl nuclear accident in the Ukraine breaks down the expert-lay divide, highlighting the accurate, detailed and contextual knowledge of the farmers (see also Murdoch and Clark, 1994). This study stands as a reminder that an absence of formal credentials does not necessarily mean that 'local' knowledge is "epistemically vacuous" (Wynne, 1996: 61). In fact, while the knowledge of the farmers concerning the impacts of radioactive contamination on their farms was considered by the scientists as lacking precision and calculability, this knowledge showed a detailed understanding of the local environment. The failure of the scientists to take account of the farmers' expertise resulted in direct conflict "over the appropriate design of scientific experiments" (Wynne, 1996: 67).

The relationship between expert and lay knowledge (these terms will remain for the sake of convenience) generates a further point of contestation: the role of trust. Beck (1992) presents an ambivalent relationship between dependence and mistrust. The invisible nature of risk means that knowledge must be mediated through science, but reflexive modernisation – and personal experience – has highlighted its systemic

failings. Anthony Giddens (1990) adopts a similar theme, but concludes that science, along with other 'expert systems' remain a fundamental source of ontological security in a world that is impenetrable to those without specialised knowledge. For these authors, trust is predicated on the accuracy of the information provided by experts; it is rational and calculative and ultimately dependent on formal science; it breaks down when the experts obviously (sometimes disasterously) get things wrong. In contrast, Wynne (1996) argues that a belief in expert knowledge is predicated on more than simple accuracy. Risk is relational: definitions and calculations of risk are rooted in connections between people and institutions. When people assess risk, they are not only responding to the risks attached to events or technologies and the quantifiable harm they might cause; they consider the behaviours and responsibilities of the relevant institutions. These judgements cannot be made independently of pre-existing relationships. When communities are dependent upon institutions, overt and publicly expressed mistrust problematise these social relationships. For Wynne, risk is as much about social identities and social relationships as it is about the calculable and identifiable potential of a negative outcome.

Sub-Politics vs Power and Domination

A third criticism of Beck's work is that he neglects patterns of power and domination in the structuring of risk (see Elliot, 2002: 302-306; Hannigan, 1995: 103-107). According to Beck, the risk society is characterised by an "equalising effect" (Beck, 1992: 35) where both rich and poor face the same dangers. The proliferation of global risks means that not even the wealthy can escape their effects. This, in conjunction with the public loss of trust in science to address these problems, results in a re-invention of politics in which there is a shift in focus from institutionalised politics towards sub-political forms of active self-management. Beck argues that a reflexive sub-politics has the greatest capacity to control the negative consequences of risk. However, Beck's work tends to assume uniformity, and that 'reflexive modernisation' transforms previous social divisions and relations of power and domination into a single politics of risk. What is needed, according to Elliot (2002: 306), is the development of "methods of analysis for explicating how patterns of power and domination feed into, and are reconstituted by, the socio-symbolic structuring of risk".

A social constructionist approach addresses this challenge by examining the role of power relations in framing risk issues. It investigates the competing frames through which debates over risk are played out, and the context-dependent nature of risk understandings. Of particular significance is how risk professionals are able to present their views as rational and objective, thereby representing competing frames as 'irrational', 'emotional' and 'non-scientific' (Hannigan, 1995: 104-105). From this perspective, it is necessary to examine claims by scientists over the nature of risk, the counter-claims that are made by citizen groups, non-government organizations and social movements, and how this process contributes to "popular concerns and risk frames…[to be]…subordinated to those which are preferred by the powerful in society" (Hannigan, 1995: 106). Of course, this is not to suggest that 'scientific knowledge' always triumphs over popular understandings of risk. As Irwin (2001) argues, "environmental knowledge is complex, problematic and characterised by uncertainties and ambivalences". This implies that caution is required in attributing unity to the claims of various groups since the knowledge on which these claims is made is always contested and changeable.

Social constructionist approaches provide a valuable counterpoint to the realism that is argued by many scholars to characterise Beck's theory of risk. In particular, social constructionism draws attention to the broader social and cultural context in which claims and counter-claims regarding risk and riskiness are constructed, and the relationship between 'expert' and 'lay' knowledge in this process. However, this 'culturalist' approach has two problems according to Crook (1999: 176-177). First, the arguably important work of risk identification, assessment and management is dissolved into generic human practice. As a consequence, questions of how risks assume prominence as objects of knowledge, and the specific practices that define, order, and give durability to certain risks over others are obscured as part of general claims-making processes. Second, there is "complicity in a myth of purity, or homogeneity, of culture" (Crook, 1999: 177). Thus, despite the recognition of the plurality of claims, and competing viewpoints, in environmental controversies, the construction of risk is based on unitary notions of culture and 'the social'. In effect, this neglects the complex ways in which risks are produced, and governed, as 'natural' or 'social' phenomena. We argue that the post-structuralist approaches of governmentality and actor-network theory are particularly useful in addressing these

two criticisms of social constructionism. On the one hand, governmentality emphasises the significance of risk identification and management practices in ordering environmental harms. On the other hand, actor-network theory – particularly the early work of Bruno Latour and Michel Callon – explores how these practices are deployed by scientific actors "as they tie other actors into networks in such a way that they become representatives of…the ('natural' and 'social') others they manage to enrol" (Murdoch, 1997: 737).

Risk as Ordering: A Post-Structuralist Approach

A governmentality approach focuses on how environmental harms are rendered knowable and calculable as objects of knowledge. Thus, risk represents a particular *style* of thinking that entails new ways of understanding and acting on harms (Rose, 1999: 246). While this approach has had a significant impact on the social sciences in the past 15 years, it has yet to be applied to the study of environmental risk in a systematic way. It therefore shows much potential for addressing the problems raised by realist and social constructionist perspectives. A governmentality approach argues that:

> There is no such thing as risk in reality. Risk is a way – or rather, a set of different ways – of ordering reality, of rendering it into a calculable form. It is a way of representing events in a certain form so that they might be made governable in particular ways, with particular techniques and for particular goals. It is a component of diverse forms of calculative rationality for governing the conduct of individuals, collectivities and populations (Dean, 1999: 131).

In other words, far from existing prior to attempts to manage it, risk is an effect of specific strategies of governing. Social constructionists agree that the management of risk needs to be examined in its social context. However, they treat risk as an unproblematic object of different groups' beliefs, values and interests. In effect, even though there may be a variety of claims and counter-claims made over the causes and consequences of harm, there is usually mutual agreement over the risk object (see Hannigan, 1995: 98). A governmentality approach problematises this by arguing that seemingly inconsequential attempts to name and manage environmental harms actually define and re-define the discursive boundaries of so-called risky events and behaviour. This is not to suggest that risk is simply a discursive construction, as is often claimed by critics of 'postmodern' theory (see Barry, 1999), but that the

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'reality' of risk is defined and shaped through attempts to render it knowable. Thus, as Dean continues, "what is important about risk is not risk itself, but the forms of knowledge that make it thinkable…the techniques that discover it…the social technologies that seek to govern it…and the political rationalities and programmes that deploy it" (1999: 131). Risk then is an outcome of attempts to 'know' environmental harm; to describe its features, to calculate its potential effects and costs, to write about, and graphically represent it, to *order* these harms.

Crucial to this process are the techniques of expertise which provide "a kind of *intellectual machinery* for government", depicting harm "in a way which both grasps its truth and re-presents it in a form in which it can enter conscious political calculation" (Rose and Miller, 1992: 182). In other words, before an environmental harm such as, for example, acid rain, can be addressed as a risk, it first needs to be represented and rendered 'knowable' as an object of knowledge that has certain characteristics, regularities and causes. This is made possible through what Miller and Rose (1990), drawing on the work of Latour (1987), call inscription devices (eg. charts, tables, graphs, academic articles) that accumulate and order harms in a technical form and thereby enable authorities to act on distant events, places and people. Thus, these devices are more than neutral means of recording already-existing risks, but material techniques that transform environmental harms into definable, diagnosable and governable issues. As Rose and Miller (1992: 183) argue, the work of making risk knowable and governable involves:

> …the complex assemblage of diverse forces – legal, architectural, professional, administrative, financial, judgmental – such that aspects of the decisions and actions of individuals, groups, organizations and populations come to be understood and regulated in relation to authoritative criteria.

This means that the definition and governing of an environmental harm as a risk is a contingent effect of how expertise attempt to negotiate and align other actors with expert-defined representations of risk. To understand how these alliances are forged, we now turn to the analytical insights of actor-network theory, and specifically the early work of French sociologist Bruno Latour.

For Latour, and other adherents of the approach termed loosely as actor-network theory, risks need to be viewed as contingent outcomes of attempts at network-

building, whereby scientists build representations of harms and attempt to enrol other groups to actively support these representations. This process – termed *translation* – focuses on the extension of scientific networks, the work involved in aligning the goals of others with that of the scientists, and the inscriptions deployed (such as charts and graphs) to stabilise these associations (see Callon, 1986; Latour, 1986; Latour, 1987). If successful, translation enables an actor, or group of actors (such as scientists), to speak on behalf of others. As a consequence, an environmental harm previously the subject of dispute comes to be stabilised as a universal 'fact' – a risk whose characteristics and consequences are no longer subject to dispute. However, it is important to note that translation is not a linear process where an instrumental scientific rationality progressively dominates, or where "the dominant rationality which comes from the risk establishment is superimposed over the popular frame due to a power differential" (Hannigan, 1995: 104). It is, in fact, a precarious process that relies on the alignment of often disparate actors (Star, 1991; Singleton and Michael, 1993; Clark and Murdoch, 1997). The work of translation is characterised by ambivalence, complexity, multivocality and competing network-building activities that shape, and may undermine, attempts by scientific 'experts' to define and to manage risk.

A significant aspect of a translation approach is that it questions the common tendency to view risks as either objectively real or socially constructed. Rather than resorting to 'nature' or 'society' as the basis for explaining risk, Latour (1993) believes that it is better to dispense with such dualisms and to explore how these two domains are produced as a consequence of attempts at network-building. Thus, this perspective focuses on the *co-construction* of the social and natural (Irwin, 2001: Chapter 7). For Latour, modernity is based on the production of what he calls 'hybrids', or mixtures of nature and culture. However, at the same time, this hybridity is concealed through practices of 'purification' that "create two entirely distinct ontological zones: that of human beings on the one hand; that of nonhumans on the other" (Latour, 1993: 11). While hybrid networks of nature-culture are constantly being created, purification constructs these domains as two very different categories: 'nature' is the legitimate domain of natural scientists while 'culture' is what social scientists are seen to study. According to Latour, this dualistic thinking limits a more complex understanding of the network-building activities (translations) through which

harms are constituted, stabilised and 'purified' as 'human' or 'non-human' risks. Practices of purification *and* translation therefore need to be studied together in order to understand how (hybrid) risks are produced and the effects in terms of how these risks are categorised as 'natural', 'social', 'moral' or 'political' problems. We should not assume an a priori distinction between these categories since they are outcomes of environmental controversies. In other words "only when networks have been established, and roles and identities distributed within them, that a clear-cut difference emerges between 'things out there' and 'humans in here'" (Murdoch, 1997: 744).

This has clear relevance to controversies over environmental harm. For example, the spilling of toxic waste might be framed simultaneously as an issue concerning nature (ie. it has a negative effect on ecosystems), a social issue (ie. waste as a harmful consequence of capitalist production), moral issue (ie. big business not taking due care with the management of waste) or a political issue (ie. raises issues over the regulation of industry). The key insight of a translation approach is that rather than resorting to one or other of these explanations, it is of more use to trace the translations (and purification) that enable such categories to be hardened into indisputable facts, and the configuration(s) of risk to which this gives rise.

Future Directions

This chapter argues that the notion of the 'risk society' has been influential in shaping sociological debate on the definition and management of risk. However, its realist assumptions have made it the subject of continued debate. From a social constructionist perspective, Beck's arguments fail to account for the multiple, and often competing, ways in which environmental harms are constituted as risks; the arenas of risk construction in which environmental controversies are played out; and, the forms of power and domination that frame the definition and governing of harms. The criticisms of Beck's work draw attention to broader tensions between 'realist' and 'social constructionist' risk perspectives. We have outlined some of the key tensions in order to demonstrate the complexities faced by environmental sociologists in examining the nature and governing of risk.

Social constructionism has proved useful in showing the social and cultural context in which risks are defined, managed and contested. Nevertheless, we have argued that it has little to say concerning the actual practices of risk identification, and how these are deployed in co-constructing actor-networks that give durability to particular representations of risk. According to Irwin (2001:179), this co-constructionist approach represents the most useful way forward in raising "fresh possibilities for sociological analysis"; in particular, it "forces us to re-evaluate no only the usage of natural arguments in environmental debates but also the shifting definition of the social" (Irwin 2001: 173). While co-construction has clear merits in examining how risks are constituted, it is also important to acknowledge its limitations. For many critics, co-constructionism is too relativist, blurring the distinction between 'human' and 'non-human'. As a result, some claim that this neglects human responsibility for environmental harm. For instance, Murdoch (2000: 129) warns that, "the price for adopting this approach may be a diminished ability to understand 'human exemptionalism' so that it becomes difficult to adjudicate on a specifically human propensity to both cause and remedy environmental destruction". The ontological status of 'human' and 'non-human' is likely to make the concept of risk an ongoing future site of debate among environmental sociologists.

Discussion Questions

1. How does Beck's Risk Society thesis conceptualise the nature and governing of environmental risk?
2. What are the main merits and limitations of the Risk Society thesis? Why?
3. Are the risks we face today fundamentally different from those of past epochs?
4. Is there such a thing as an incalculable risk?
5. In what ways is risk socially constructed?
6. What is the relationship between expert and lay knowledge in the definition and management of risk?
7. What are the key differences between realist, social constructionist and post-structuralist approaches to the definition and governance of risk?
8. Do you agree with Dean (1999: 131) that risk is a means of ordering reality? Why or why not?

9. Think of an environmental controversy with which you are familiar. In what ways are different rationalities of risk, and risk management, evident?

Glossary of Terms

Co-Constructionism: A sociological perspective that conceptualises 'natural' and 'social' phenomena, or 'real' and 'socially constructed' risks, as outcomes or effects of environmental controversies. Rather than treating nature and culture as two separate domains, this approach explores the work of **translation** (see below) involved in producing such distinctions.

Governmentality: A sociological perspective that views risk as configurations of rationalities and techniques for ordering harms. The 'reality' of risk is defined and governed through attempts to write about, represent and calculate various harms.

Realism: A powerful approach in environmental sociology which argues that the materiality and effects of risk exist independently of, and externally to, people's attempts to understand and manage it. That is to say, risk pre-exists human attempts to define and manage environmental harms.

Risk: Refers to the possibility of particular outcomes. In simple modernity, risks were believed to be calculable, and thus manageable. Risks are not hazards, which can be neither calculated nor controlled.

Risk Society: A negative consequence of modernisation in which risk assumes a central place in the ordering of society. The risks faced in this society are qualitatively different from those of the past, and their difference forms the basis for reconsidering relationships, institutions and practices.

Reflexive Modernisation: A historical shift whereby the taken-for-granted principles and practices of industrial society are confronted in late modernity. Individuals and society as a whole apply an increasingly sceptical scrutiny to modernist projects and outcomes, which are reinterpreted as problems.

Social Constructionism: In the context of environmental issues, social constructionism is an umbrella term that emphasises the cultural definitions and interpretive frameworks that give shape to particular environmental issues as social problems.

Sub-Politics: A new form of politics, developing in response to the risks now faced in late modernity. This is not based on traditional political systems, party loyalties or class divides but rather seeks to change things via alternative forms of action.

Translation: A process whereby an actor, or group of actors, attempts to enrol and align others into its representation of risk and thereby be conferred with the authority to speak on behalf of these other actors. From this perspective, society or nature should never be seen as a way of explaining the nature of risk; rather, these domains are a consequence of the alignment and stabilisation of heterogeneous associations of actors and resources.

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