Cultural theory and risk: a review[1]

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Abstract *Cultural theory has evolved over the past 20 years to become an important framework for understanding how groups in society interpret danger and build trust or distrust in institutions creating and regulating risk. This paper examines the theoretical roots of cultural theory, traces its passage in the risk literature, and explores its value in current risk management issues. It concludes that cultural theory continues to be of value, but that its role needs to be reassessed in the emerging age of deliberative science. Some examples of how cultural theory might be applied to health risk management and to the genetic modification of food debate are provided to illustrate the scope for further research.*

Key words: risk perception; cultural theory; grid group analysis; deliberative science

Introduction

To help the reader unfamiliar with this concept, let us first put it in full context. Cultural theory is a way of interpreting how and why individuals form judgements about danger, pollution and threat. The point of the theory is to show that such judgements are not formed independently of social context. They are part of an evolving social debate about rights to know, justice for those likely to be affected by damage or loss of peace of mind, and about blame, responsibility and liability. In order to understand why some risks become politicised and emphasised whilst others remain latent, it is crucial to develop a framework that explains how risks are both constructed and selected. Cultural theorists argue that social debates about risks cannot be reduced to concerns about safety and demonstrate instead how they are inseparable from issues relating to power, justice and legitimacy. Cultural theory also provides some normative guidelines that emphasise the importance of the processes by which decisions regarding risk are made, over the substantive issues of risk quantification. Essentially, cultural theory suggests that the views of any particular individual on matters are shaped by the nature of social groups of which they are a part, i.e., various organisations, peer group influences or other sources of authority, and by the degree to which individuals feel bonded to larger social groups. Thus attitudes and judgements about risks and about the pattern of social justice and responsible government are set in cultural relationships, namely the expectations and value systems of people belonging to the distinctive groups.

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The significance of cultural theory for risk perception, and particularly for health-related risks, is that viewpoints about expertise, about scientific integrity, about professional reliability and integrity, and about the credibility of health-related messages will all be influenced by the interactional context in which judgements are made.

We begin by examining the intellectual history of the cultural theory of risk from its inception in anthropological theory through to its application to contemporary risk issues. The route taken may seem a little tangential but we argue that most of the fundamental ideas of the early literature are still pertinent today. Subsequent research has applied this early interpretation with varying degrees of success (Thompson *et al.* (1990) provide one comprehensive list of applications). In particular, there has been an emphasis on 'testing' cultural theory, which has led to some inventions, such as the 'grid/group typology', being given greater attention and subsequently being misinterpreted. By revisiting the origins of the theory and reiterating the original caveats attached to the typology, we suggest that cultural theory has a great deal to contribute to contemporary debates about risk. This is particularly so in the arena of deliberative science, namely the progression of knowledge and understanding through debate and reinterpretation.

Kasperson (1992) identifies the major dichotomies in risk research, the most striking of which is that between the 'technical' and 'social or perceptual' analyses of risk. Cultural theory has emerged as one of the two paradigms in the social analysis of risk, the second being the psychometric approach to risk. This distinction is analysed in some detail by Marris *et al.* (1998). The 'social amplification of risk' approach advocated by Kasperson *et al.* (1988) seeks to be integrationist in scope but may be trying to reconcile the reconcilable. Indeed, Rayner (1992: pp. 93–94; 1993: p. 198) argues that an encompassing definition is impossible. Instead he prefers a polythetic concept of risk which implies that there is a 'family' of definitions with many links but no single feature that is common to all of them. We shall see that this approach may lead to a community of deliberation rather than consensus over a single interpretation. It is this 'framed' flexibility that may provide cultural theory with its best opportunity for theoretical advance in the coming years.

A technical approach to risks (R) involves their characterisation in terms of magnitude (M) and the probability of exposure (P), such that $R = PM$. The normative choice that is rarely made explicit is to reduce the largest risks to which a population is exposed; in other words, risk is predominantly about safety. This assumes that rational choices are guided by the *utility principle* that is central to economic rationalism. See, for example, Pearce (1994; pp. 132–135) who seeks to show how utility theory can accommodate the vagaries of risk perception. The social analysis of risk rejects this unified view of rationality. Psychometric accounts still assume individual rationality, but suggest that consistent heuristics, such as 'dread' or 'controllability', influence the perception and ranking of risks (Slovic, 1992; for a review see Douglas, 1985). The cultural theory of risk explains why risks become politicised. Defining risk in political terms means that it is a function of "fairness considerations such as trust, liability distribution, and consent" (Rayner, 1993: p. 198). Cultural theory does not question the validity of technical procedures for hazard identification (Douglas, 1992: p. 30). What cultural theory does do is to criticise the apparent depoliticisation of risk issues—the subtle process of taking for granted the link between hazard identification and the normative choices that follow. This involves stripping away the 'subjective' features of politics and morals that are essential to what Douglas calls the 'forensic' uses of risk. Thus the cultural theoretical approach to risk preparation explains why some issues become politicised and hence embroiled in disputes over the allocation of blame and the distribution of power, while others appear to be tolerated within norms of social values and trust.

The dominant approach in the social sciences is methodological individualism. This

approach begins by defining individual behaviour and extrapolates to explain social action (Rayner, 1992). In a detailed study of aggregate and individual perceptions of risk factors, Marris *et al.* (1997: p. 310) found that different individuals did attribute different characteristics to the same risk issue. This implies that cultural dimensions should shed more light on how perceptions form and endure. Cultural theory focuses instead on what is shared by people who form solidarities of outlook through their interactions in the social world. Culture is defined in this context as a shared interpretative framework for such groups, or "the common way that a community of persons makes sense of the world ... a set of plans, instructions, and rules" (Gross & Rayner, 1985: pp. 1, 3).

This statement reveals one of the first assumption of cultural theory, namely that members of groups with a common outlook, are disposed to impose order on reality in particular ways. This is a common theme throughout sociological theory in the works of Giddens (1990) on practical consciousness and 'ontological security' (1997), Bourdieu on habitus (Bourdieu, 1990) and Berger on socialisation (1967). Mark Haugaard (1997) provides an accessible and pragmatic synthesis of these ideas. All we need note here is the idea that we assign 'symbolic meaning' to events in the social and natural world to create order and coherence. This does not imply that humans are biologically predisposed to communality but rather that they rely on patterns of habituation and recursiveness. The model of human action assumes rational egoism but also recognises that social order "gives social life an external predictability which is *facilitative* to the realisation of desired egoistic ends. The predictability of social life facilitates the egoistic pursuit of goals" (Haugaard, 1997: p. 26).

Giddens notes that the culturally bonding mechanism is best understood by examining the consequences of its absence. He refers to studies which suggest that the absence of trust-securing mechanisms may cause infantile schizophrenia. More generally, the absence of such trust-securing mechanisms is best described as angst or dread. Other examples include studies of the negative effects of unemployment (Brenner, 1977; Eyer, 1977). Employment is one significant means by which the individual constructs an identity within society and hence "[to] the extent to which the work is performed well and employment is secure, the individual sense of contribution and sense of self value are secure" (Brenner, 1977: p. 582). The absence of this security of identity is implicated as one cause of mental illness and suicide.

Summarising this brief introductory review, cultural theory is important for helping to understand the social construction of risk, through processes of value identification and trust building. These procedures are mental and social anchors in grappling with a world full of surprises, uncertainties and a science that can no longer try to exclude values and participatory procedures. The constructivist view is sometimes referred to as the 'social construction of reality'. Douglas (1997) suggests that the phrase 'social construction of risk' has been a source of confusion because it is interpreted as a denial of the reality of risks. This fails to acknowledge that all human activity, including the physical sciences, rely on social construction:

> All knowledge and everything we talk about is collectively constructed. Language is no private invention. Words are a collective product, and so are meanings. There could not be risks, illnesses, dangers, or any reality, knowledge of which is not constructed. It might be better if the word "social construal" were used instead of "construction", because all evidence has to be construed. (Douglas, 1997: p. 123)

The second assumption of cultural theory is that natural systems are full of surprises and uncertainties, so are unpredictable. Cultural theory makes no attempt to account for differences in individual perceptions of nature. It suggests that, because politics is inherently a

collective process (Jordan & O'Riordan, 1999), then what is important is to understand how groups select and frame risks. Cultural theory accepts the uniqueness of subjective individual positions but predicts a limited number of cultural biases in the collective representations of dangers. It looks at the relationships amongst human beings and "argues that risks are defined, perceived, and managed according to principles that inhere in particular forms of social organisation" (Rayner, 1992: p. 84). Multiple interpretations of nature are possible because of the inherent ambiguity of risky phenomena—there will often be the very small probability of risks of great magnitude. This model of 'constrained relativism' (namely limited numbers of patterning of others) (Thompson *et al.*, 1990: p. 25) is represented in a four-way typology presented in the later in this paper.

Linking risk, danger and pollution

Mary Douglas is credited with being the originator of the cultural theory of risk. With a background in anthropology, her interest in risk in industrial societies evolved from her work in the 1960s on pollution and dangers in tribal societies. In *Purity and Danger* (Douglas, 1966) she takes on the task of "vindicating the so-called primitives from the charge of having a different logic or method of thinking" (Douglas, 1992: p. 3). Douglas argues that the 'danger' taboos linked to acts of pollution by primitive groups play an intelligible role in maintaining particular forms of social order. There is always some explanation for the misfortunes that befall individuals within any social group, but Douglas claims that social groups hold consistent forms of explanation for misfortune.

For instance, the Hima people of Uganda (Elam, 1973, in Douglas & Wildavsky, 1983: pp. 40–48) have a number of 'taboos' that were explored as part of a study of their culture. One such taboo was that contact between women and cattle would result in cattle becoming sick and dying. The study identified a rational and causal explanation for this within Hima society, in that the belief reinforces the differentiation of gender roles, thus helping to maintain the social order. The danger is real in that cattle do die or fall sick but the meaning is contextual. A similar example is where it is believed that a wife's adultery may cause her husband to receive a fatal arrow wound. The function of the linkage between danger and blame is to uphold judgements of appropriateness and hence to reproduce a particular social order.

Using a similar link between the appearance of a danger and the blaming process we can identify some more familiar examples. It is known that in fourteenth century Europe, poor water quality was a persistent danger, but the issue only became politicised when persecution of the Jews began and as part of that process, they were blamed for poisoning well-water (Douglas & Wildavsky, 1983: p. 7). This link between events and the varying processes by which blame is attached is called the *forensic model of danger.* The allocation of responsibility for hazard events is a "normal strategy for protecting a particular set of values belonging to a particular way of life ... shared confidence and shared fears, are part of the dialogue on how best to organise social relations" (Douglas & Wildavsky, 1983: p. 8). According to the forensic model, the selection of dangers (risks) is unavoidably political in all simpler societies and, by implication, in all industrial societies. If these examples seem to be the products of 'primitive' mysticism, consider the modern example of HIV (Douglas, 1992). As awareness of HIV increased in the 1980s, the linkage of the condition to the perceived immorality of homosexuality and promiscuity was common, to the extent that one would have to assume that the virus was capable of making a moral judgement.

Douglas (1992) acknowledges that she failed to apply this forensic model to what industrial society calls 'risk' for too long. It was argued that dangers had been disengaged from politics

and ideology to be dealt with objectively by science. Technology supposedly allows industrial societies to identify the objective causes of dangers, and so their forensic quality is lost. The 1970s brought a surplus of examples as fissures appeared in the foundations of scientific endeavour. Technology became a source of danger in itself and scientific knowledge was found to be lacking in critical areas. This is the basic argument of Beck's *Risk Society*. Beck (1992) sought to show that the private sphere of commercialisation and consumption was imposing a particular class of risk, driven by technology and promoted by science, that led to a feeling amongst certain groups that risk was indentured in the very nature of emerging society. It was the combination of ubiquitousness, powerlessness and dependency on the very science and technology that created the risk in the first place that gave Beck his publicity.

The forensic links between dangers and blame were re-established in attacks on government for its failure to restrain industry and in the defence of the 'naturalness' of natural resources. The first explicit link between the emerging risk crises and Douglas' work was made by Thompson (1982b). He adopted a typology introduced below to explore West German risk perceptions regarding nuclear energy and views on uncertainty held among Himalayan Sherpa Buddhists. He argued that the forensic uses of risk are as pervasive as in the tribal societies Douglas described in *Purity and Danger*. There is now a system that is "almost ready to treat every death as chargeable to someone's account, every accident as caused by someone's criminal negligence, every sickness a threatened prosecution. Whose fault? is the first question" (Douglas, 1992: p. 16).

Central to cultural theory is the assertion that the differences between the taboos of 'primitives' and risk in modern society is a difference of degree. Douglas suggests that the terms risk and taboo could be subsumed under the more encompassing term 'dangers'. The claims for the universality of the forensic uses of danger implies that:

> [t]he modern concept of risk, parsed now as danger, is invoked to protect individuals against the encroachment of others. It is part of the system of thought that upholds the type of individualist culture, which sustains an expanding industrial system. The dialogue about risk plays the role equivalent to taboo or sin, but the slope is tilted in the reverse direction, away from protecting the community and in favour of protecting the individual (Douglas, 1992: p. 28).

Re-uniting primitives and moderns

Douglas was approached by a political scientist, Aaron Wildavsky, to apply the forensic model to the United States. The result of this challenge was the development of a single forensic theory of danger that applied equally to 'moderns' and 'primitives' (Douglas & Wildavsky, 1983). The resulting book, *Risk and Culture*, is nowadays regarded as a key text for understanding the origins of cultural theory.

The world appears to be a less hazardous place than it was even 50 years ago, simply because most people in developed countries live longer. Douglas & Wildavsky explain why it is that in countries such as the United States, where hazards have systematically been decreased, people feel more at risk. Specifically, these authors seek to explain the rise of environmentalism in the US in the late 1960s and 1970s and the appearance of 'troubled nature'. Given that the prevalence of lethal hazards has diminished, the thesis is that the feeling of being more 'at risk' must be social in origin.

Douglas & Wildavsky argue that there has been a constant tension between the 'Center' and the 'Border' in US politics. The Center incorporates two enduring categories in western political thought: the market and the hierarchy. The market represented innovation, individ-

ualism and progressivism, while the hierarchy protected the general social order against the excesses of market opportunism. The one needed the other for its positioning and influence. Douglas (1985), Ostrander (1982) and Thompson *et al.* (1990) explore the persistence of these forms of organisation in the twentieth century and suggest that most attempts to expand beyond three or four forms of social order invariably collapse back into these two. The central argument in *Risk and Culture* is that neither category is adequate for describing the form of organisation and activity that became prevalent in the US in the 1960s and 1970s. This they call the 'Border'.

This axis of tension between the 'Center' and the 'Border' is embodied in the US constitution and protects citizens from the worst ravages of 'big government'. On a shorter timescale they show that there was a concentration of power in the 'Center' as a result of the depression of the 1930s, the Second World War and the rise of international communism. By the 1960s and 1970s the validity of this concentration of power was being questioned. Furthermore, two events were identified as weakening faith in the 'Center'. The first was the Vietnam War, which challenged the legitimacy of foreign intervention and conscription. The second was the discrediting of President Nixon in the Watergate affair. Watergate revealed such widespread and organised political corruption that trust in the institutions of government was substantially degraded. These historical events combined with demographic and economic shifts leading to a more mature and affluent US society. The 'Border' became a critical vocal group whose ideological positions increasingly differed from those of the 'Center'.

Douglas & Wildavsky argue that one consequence of the weakening of the 'Center' was a rise in a type of organisation known as the 'sect'. The term is usually applied to religious groups like the Amish, but Douglas & Wildavsky argued that they share many structural similarities with environmental groups. Sects have always been present at the 'Border' of US society but have been ignored due to their tendency to isolate themselves. The key similarity between the emergent sects and their religious analogues lay in their commitment to shared equality amongst the members of the group, as embodied in the concept of egalitarianism. Newly emergent environmental groups took on egalitarian principles, not so much as an active choice, but because of the absence of an alternative. Another dimension of social order had to be given prominence. Such voluntary associations, often between friends and neighbours, create problems because a "start from a power vacuum ... creates problems of organisation which are partly solved by adopting a principle of equality" (Douglas, 1985: p. 96).

The organic nature of group formation means that it is difficult to differentiate roles in the absence of any greater authority. Furthermore, the groups were often drawn together by a common belief in the corruption of bureaucracies, big government and big industry. The central problem facing such groups is that of maintaining membership. Sects such as the Amish were formed out of a rejection of the hierarchism of the church, so creating virtue out of equality. Douglas & Wildavsky found that the problems of maintaining membership were pervasive because so much time was spent avoiding dissolution. The two strategies that bonded these groups were the identification of external dangers or the internal promise of millenarianism. In religious groups, the forensic model of danger involves the evocation of acts, which are impure or ungodly. God is the arbiter of human designs and fear of God is the danger evoked. The millenarian strategy creates prestige for all the members of the group, which encourages godliness and is utopian, believing in a greater future for the deserving members of the group.

Within environmental groups organised along similar egalitarian lines, the challenges of

maintaining membership are identical. The difference is that, in a secular society, God has limited sanction. Instead Douglas & Wildavsky argue:

> The sectarian style is to use the whole of nature to solve its problems of voluntary organisation ... they identify the risks the world faces from the pollution of nature. Global issues, not local ones, will best serve their purpose best ... Physical nature is their best substitute for God, not only because nature is powerful and unpredictable. (Douglas & Wildavsky, 1983: p. 125)

This implies that egalitarian-based groups will select and emphasise real dangers based on the need to maintain membership. The logic of the argument is that the greater the danger, the greater the binding force it creates amongst the members. The result is that the small probabilities of catastrophe that are associated with many industrial processes (most notably nuclear power) become very much part of the day to day reality of the group. Furthermore, organisation on egalitarian lines means debates are framed in terms of pure principle—good versus bad—because a more sophisticated framing would require recourse to some form of authority. In summary, the 'cultural bias' of voluntary environmental associations is toward a dichotomised world of great dangers.

In framing their analysis in terms of the 'Border' (sects) versus the 'Center', Douglas & Wildavsky argue that the underlying issue is the degree of legitimacy associated with centralised 'big government' and 'big industry'. They argue that it is impossible to understand the emergence of the critical 'Border' without understanding the bias of the 'Center'. The 'Center' tends to exclude softer moral and ethical issues from decision-making. Nature becomes the focal point for a debate about the legitimacy of the activities of the 'Center' and hence is like an armoury of weapons at hand for the war of political ideas. The environmental organisations at the critical 'Border' arena are re-politicising risk issues by forcing ethical dimensions back onto the agenda. As we will see in the next section, whilst they unavoidably tend to polarise the debate, there is little doubt that they are:

> using nature in the old primitive way: impurities in the physical world or chemical carcinogens in the body are directly traced to immoral forms of economic and political power. It is not only the natural environment that is polluted. (Douglas & Wildavsky, 1983: p. 47)

The framework for analysing the activities of different groups associated with the 'Center' and the 'Border' is valuable because it is a neutral tool. It does not seek to classify the actions of the different groups in terms of rationality and irrationality as the expert–lay distinction often implies. Instead, within a cultural setting the distinctive patterns in the framing of dangers is not only rational but also vital and unavoidable. Douglas & Wildavsky differentiate between three types of culture—*sectarian, individualist and bureaucratic*—and explore the tendencies that these different constellations of power and authority entail. The sectarian organisations at critical 'Borders' can only exist in opposition to the more stable 'Center'.

The grid–group typology

The formalisation of Douglas' ideas on pollution and danger in her earlier work (Douglas, 1966, 1970) came with the development of a formal typology based on two axes: grid and group (Douglas, 1978). This typology has become the best known element of the cultural theory of risk. Indeed, the typology is often confused with the theory within which it is embedded (Boholm, 1996). This is why we have sought to explore the theoretical antecedents to cultural theory, before discussing the grid–group typology.

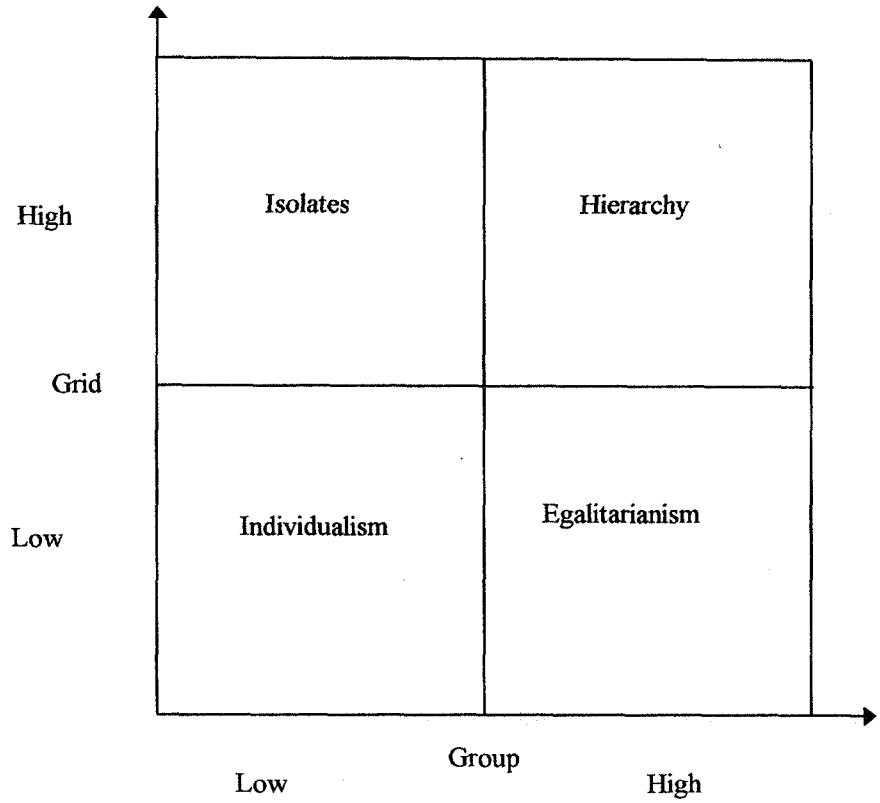

Figure 1. *Grid/group dimensions and solidarities.*

In *Essays in the Sociology of Perception* (1982), Mary Douglas sets out the basic assumptions behind two axes of the typology. Firstly, she considers the minimum forms of commitment to life in a society postulated by political theory. These are represented in terms of the strength of allegiance to a group. Secondly, she considers the extent of regulation within or without the group; this is the grid axis. For instance, a military regiment with its prescriptions for behaviour and rigid timetabling represents a high grid social environment. Ostrander defines the two axes succinctly by arguing that social order limits the freedom of individuals in two spheres: *whom* one interacts with (group), and *how* one interacts with them (grid). Another succinct definition considers the dimensions in terms of two questions related to identity, to which social institutions provide answers: who am I and what can I do? (Hoppe & Peterse, 1994: p. 31). A more elaborate version is provided by Thompson *et al.*:

> Group refers to the extent to which an individual is incorporated into bounded units. The greater the incorporation, the more individual choice is subject to group determination. Grid denotes the degree to which an individual's life is circumscribed by externally imposed prescriptions (Thompson *et al.*, 1990: p. 5)

From these two variables, the four possible forms of social environment in Figure 1 can be drawn. It is argued that the boundaries between these forms are real and also that they apply to all forms of social relations (Douglas, 1982; see also Coyle, 1994: p. 219). As we shall see, the labels attached to the four social contexts have been a cause of some confusion. Gross & Rayner (1985) describe them relative to the axes (i.e., high grid, high group) but it is more

Table 1. *Grid–group labels*

Source	Definition by 'grid' and 'group' axes			
	Low grid, low group	High grid, low group	High grid, high group	Low grid, high group
Douglas (1982)	Individualism	Atomised subordination	Ascribed hierarchy	Factionalism
Douglas (1992)	Markets	Isolates	Hierarchies	Sects
Rayner (1992)	Competitive individualists/ markets	Stratified individuals	Complex groups/ hierarchies	Egalitarian groups/ collectives
Jordan & O'Riordan (1997)	Individualists	Fatalists	Hierarchists	Egalitarians
Coyle (1994)	Libertarianism	Despotism	Hierarchy	Egalitarianism
Ellis & Thompson (1997)	Individualism	Fatalism	Hierarchy	Egalitarianism

common to apply briefer and more intuitive labels. A selection of these labels is included in Table 1.

Thompson (1997) describes the four social contexts as *solidarities*. This is helpful because it emphasises the way in which institutional forms bind individuals by defining accepted forms of behaviour. Hierarchies and sects have strong group dimensions. For instance, hierarchies clearly differentiate an individual's role relative to the roles of other members of the group. This form is typical of bureaucracies and emphasises rules and order. Sectarian forms emphasise equality, and solidarity is often reinforced through the identification of external dangers.

Markets and isolates are characterised by a weak group dimension to their social solidarity. This does not imply an absence of society or sociality. The conventional example of an individualist institution is the market, where individuals are unconstrained by the rules of a hierarchical institution or the strong demands of a group. Markets involve the formation of networks that are fluid, opportunistic and non-constraining. Isolates are constrained by a high grid dimension, but also have no incentive to form groups. As a form of solidarity, it is the most difficult to understand because the weak grid dimension implies an absence of power. These institutions are sometimes left out of the typology because they are politically bereft (Coyle, 1994). Perhaps they are best understood if one acknowledges that some form of solidarity is better than none. The essence of culture is the need to impose some form of order on the life world, even if this is a common sense of resignation.

The grid dimension monitors behaviour in general, but also applies to symbolic action. In high grid situations, symbolic action will be routinised, whilst in low grid contexts it will be personalised. Ostrander (1982) also focuses on the interactional level. He identifies a 'stable diagonal' between hierarchies and markets that suggests they can form enduring social structures. The opposite diagonal between isolates and sects is unstable, so enduring social structures are less likely. There are two implications of these tendencies towards stability and instability. Firstly, across the stable diagonal there will be a tendency to see the cosmological order as having positive value. Secondly, across the stable diagonal we may begin to see an elaboration in the symbolic system as a consequence of long traditions of doctrine and interpretation. Ostrander suggests that with time, the elaboration will tend to be greater than any individual can master. This helps to reinforce the differentials inherent to a hierarchy. Increasing specialisation satisfies the goals of those active in a particular culture. Along the

1. Society and nature separate	1. Society part of nature
2. Above relationship negatively valued	2. Above relationship positively valued
3. Routinised symbolic action	3. Routinised symbolic action
4. Ego-oriented goals of action	4. Group-oriented goals of symbolic action
5. Unelaborated symbolic system (High Grid, Low Group)	(High Grid, High Group) 5. Elaborated symbolic system
(Low Grid, Low Group) 1. Society and nature separate	(Low Grid, High Group) 1. Society part of nature
2. Above relationship positively valued	2. Above relationship negatively valued
3. Personalised symbolic action	3. Personalised symbolic action
4. Ego-oriented goals of action	4. Group-oriented goals of symbolic action
5. Elaborated symbolic system	5. Unelaborated symbolic system

Figure 2. *Interpretations of grid-group typology (Ostrander, 1982).*

unstable diagonal, folk traditions may exist but they will remain simple enough that all individuals can inculcate them.

The predictions about the cosmological order, symbolic action, and elaboration allow Ostrander to make five statements about tendencies within each quadrant, as represented in Figure 2.

Schwarz & Thompson (1990) provide a slightly different approach to the different views of nature associated with each cultural bias. They draw on the work of Holling (1986) who had studied ecologists working in ecosystems such as forests, fisheries and grasslands. Holling consistently identified four different representations of ecosystem stability, which can be represented by a ball on a landscape. Schwarz & Thompson super-impose these metaphorical representations of nature on the grid group axes (Figure 3). The benign view assumes that nature is resilient and can take whatever knocks that are imposed. We have alluded to the ephemeral view in our discussion of sects. The collective representation of nature emphasises its fragility. The view of nature as both perverse and tolerant implies that nature is reasonably robust, but that the unpredictable risk of exceeding the limits justifies regulation. The final view of nature as capricious advocates fatalism in the face of natural systems that are inherently unpredictable. This is summarised in Figure 3.

Michael Thompson, in collaboration with a number of other cultural theorists, has been the most active in working through the implications of the four cultural biases, following the same Durkheimian logic as Ostrander (1982). For instance, in *Divided We Stand*, 22 dimensions relating to cultural bias are considered. These include the form of rationality, the ideal of fairness, preferred forms of governance and risk handling style (Schwarz & Thompson, 1990: pp. 66–7).

The grid–group typology has been applied much more widely than the field of risk. Within one volume it is applied to a comparative analysis of roads policy, to the social construction of slavery, to rationality and to violence (all in Coyle & Ellis, 1994). Often in these volumes

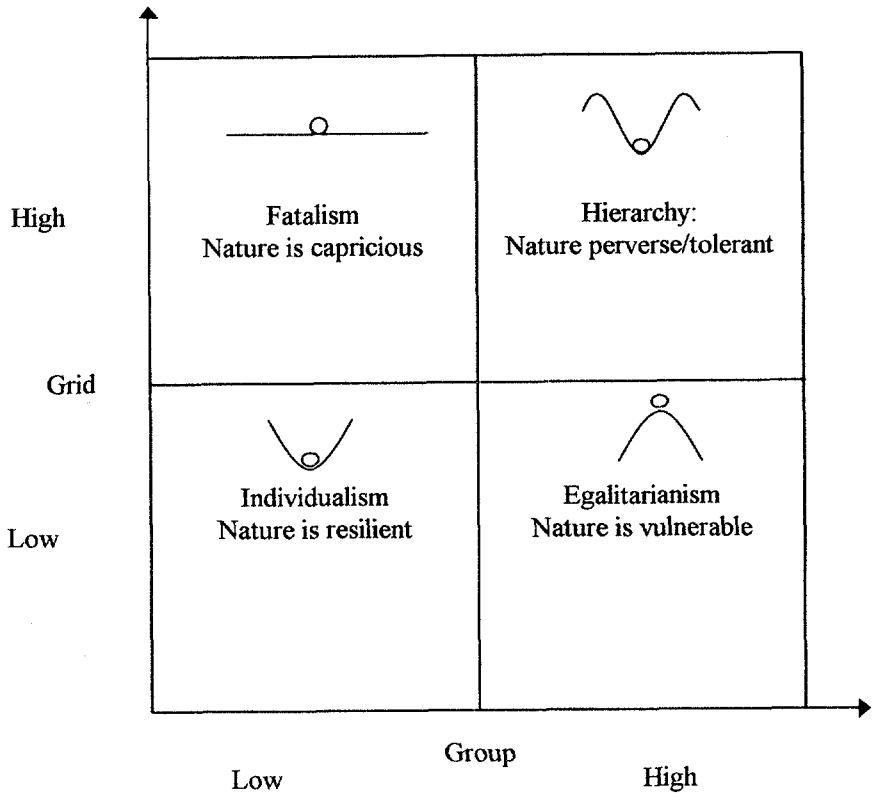

Figure 3. *Myths of humans and nature.*

the grid–group typology is the most prominent feature, but this has led to some misinterpretations, of which more below.

Rayner (1993) rightly describes the institutional types as building blocks for describing larger organisations such as nation states. His study of a hospital is an example that demonstrates the various biases that come into contact with each other, from the individualist competitive culture in which surgeons operate to the prescriptive hierarchical culture of the Radiation Protection Officer (Rayner, 1986). Schwarz & Thompson(1990) borrow the term 'regime' from political science to describe organisational frameworks that include a number or institutional forms in a similar way to a study by Gerlach & Rayner (1988). A further synthesis of ideas has occurred in the last few years between this strand of cultural theory and the work of Young (1989) in the field of international relations. This synthesis facilitates the application of cultural theory to global environmental risk issues, such as climate change. Several accessible accounts have been produced very recently, and we leave it to the reader to pursue these (Ellis & Thompson, 1997; Thompson & Rayner, 1998a,b).

Criticisms of cultural theory

It would be worrying if cultural theory was *not* the subject of criticism because this would imply that it was not considered a serious enough contribution to social theory to merit review.

Douglas designed the grid–group "gently to push what is known into an explicit typology

that captures the wisdom of a hundred years of sociology, anthropology and psychology" (Douglas, 1982: p. 1).[2] Douglas recognised the limitations of typologies and identified a number of caveats to which we add the cautions of Ostrander (1982).

The first is that the typology makes no claim to understanding the nature of individual free will and hence is not wholly deterministic. The distinct limitations to the application of the typology are also noted by Gross & Rayner:

> the grid/group model does not preclude psychological theories of how different personality types might gravitate towards one kind of social context or another. It does not tell us what economic inducements or deprivations dispose persons to change their social organisation ... (Gross & Rayner, 1985: p. 18)

Secondly, the typology is static, and so is not designed to illustrate the processes of change. Thirdly, the typology is a relative rather than an absolute analytical tool, and so is primarily of heuristic value. Finally, Ostrander emphasises that the typology should be applied to social environments rather than to societies and hence is technically incapable of distinguishing whole social systems. Cultural theory typology can be used to analyse the building blocks of nations, or spatially more diffuse regimes (Rayner, 1993).

Rayner (1992) first documented a substantial difference of opinion amongst cultural theorists. Referring to the grid–group diagram he distinguishes between the *stability hypothesis* and the *mobility hypothesis*. The two opposing hypotheses may explain the dynamics of individual attitudes towards the various institutional contexts encountered. Douglas favours the stability view, namely that individuals will seek consistency between the different social environments within which they operate. People from hierarchical families will choose hierarchical jobs and hierarchical organisations. In contrast, the *mobility hypothesis* favoured by Rayner has a more flexible interpretation, namely:

> cultural theory is limited only to predicting how things can be said in a particular context ... Appeals to the common good are unlikely to carry much weight in the competitive marketplace but arguments about opportunities for individual advancement might do well ... individuals may flit like butterflies from context to context, changing the nature of their arguments as they do (Rayner, 1992: p. 107–108)

The bias towards the stability hypothesis encourages some practitioners to associate the cultural bias of organisations with the individuals that reproduce the institutions. Consider for instance the following sentences:

> The individualists are less doctrinally committed. Being pragmatic materialists, they will try to align themselves with whichever development path offers them the best financial prospects. (Schwarz & Thompson, 1990: p. 12)

Whilst the authors are vigorous in their rejection of methodological individualism (see, for instance, Thompson, 1997), this ambiguous language feeds the misinterpretations of cultural theory.

Also contributing to the confusion is Adams (1995). He treats the four regions on the typology as archetypes representing four different rationalities. In so doing he converts the typology into an ontology. The different rationalities are incorporated into his 'risk compensation model' as perceptual filters between the rewards available and the propensity to take risks.

'Individuals' have remained problematic for cultural theory. The debate has been fed by

2. Ostrander (1982) does this more explicitly by exploring the links with other one- and two-dimensional typologies including those of Weber and Durkheim. Thompson *et al.* (1990) provide a comprehensive review of cultural theories.

attempts both to operationalise the grid–group typology and to 'test' the theory. Gross & Rayner (1985) developed a model for operationalisation around a hypothetical case study involving the siting of a nuclear plant. Their model identified qualitative and quantitative indices of grid and group, for instance, the proportion of time spent in the group and the frequency of meetings. The qualitative analysis they perform is more convincing. Whilst the quantitative approach is interesting, they acknowledge that it would be extremely difficult to carry out in reality. The quantitative indices would need to be tailored for the social contexts under examination. From a methodological point of view, this would require a great deal of intervention in the activities of the groups.

Wildavsky & Dake also tried to measure grid and group using questionnaire surveys (Dake & Widavsky, 1990; Dake, 1992). These studies very much resemble psychological surveys, for they employ Likert scales on an agree–disagree response to preselected statements. These surveys were drawn upon for a similar study by Marris *et al.* (1998) that compares cultural and psychometric theories of risk. From an epistemological perspective they owe more to the methodological individualism of which Douglas has been so fiercely critical (Douglas, 1992, 1997). It clearly violates the caveats set out above, and ultimately substitutes the single archetype of neo-classical economics with four archetypes. These 'cultures' are composed of collaborating individuals whose predispositions are hard-wired. This version of 'cultural' theory is more akin to psychological theories such as the Myers–Briggs Type Indicators (MBTI). These are based on Jungian archetypes and identify 16 types based on four dichotomised axes of variation. Given the difficulties of operationalising this much more encompassing model (Kline, 1993), the psychological hybrid of cultural theory would seem to be an overly ambitious extension. Perhaps it is safest to "desist from methodological and epistemological individualism altogether ... [and] no longer talk about individuals as egalitarians, 'hierarchists,' etc. ... The values people express or reveal will depend on whether they are attempting to make or dissolve solidarity with others in one of the respective social contexts" (Rayner, pers. commun.).

Marris *et al.* (1998) looked to see how far the psychometric filter actually portrayed cultural solidarities. They found that overall correlations between the risk perception ratings and the four cultural biases were very low, with only 0.34 for the higher correlation. Nevertheless, a statistically high grouping of correlations was found, suggesting that cultural groupings may provide a useful pattern if viewed as a whole. But the telling finding was that only 14% of the sample could be fitted unambiguously into the 'cultural frame' depicted in Figure 3 on the basis of the psychometric filter:

> we make no claims for statistical support for cultural theory. Like Sjoberg (1995), we claim more for patterns of association than underlying explanations of risk perception (Marris *et al.*, 1998; p. 210).

Douglas' critique of methodological individualism is based on the assertion that it owes more to the ideological choices of the researchers than to good method. Paradoxically, out of an ideological commitment to individual freedom and autonomy, the orientation represents human activity as being essentially constrained by innate preferences. The cultural theoretical approach would seem to offer much greater flexibility for action.

Boholm (1996) argues that there is no intellectual rigour in the claim that 'outlooks on the world' and 'ways of life' are influenced by patterns of social relations. He is particularly scathing of the psychometric filter, arguing that the methodology is self-serving. The work of Marris *et al.* (1998) indicates that he is right. Sjoberg (1996) supports this conclusion from a Swedish study. Sjoberg tends to a Weberian or co-operative interpretation, Boholm leans more to a Marxist or deterministic interpretation of culturally formed outlooks. Milton

(1996) regards cultural theory as leaving insufficient room for human agency and, in any case, is too static. These critiques raise some interesting issues for cultural theorists but many have been dealt with in detail in the rich literature that bore the typology.

In response to the criticisms of the typology, Douglas (1997) restates the basic assumptions of cultural theory. She distinguishes between cultural biases and social interaction within different cultural settings. A cultural bias has its own framing assumptions, and readily available assumptions for responding to standardised problems. This makes it important to the maintenance of reality. Culture is presented almost as a device for problem-solving in the face of the limits of individual action. Douglas suggests that "[a] common culture is a source for salient reference points and heuristics" (ibid: 128). Culture is presented as "a dialogue that allocates praise and blame. Then focus particularly on blame" (ibid: 129). This is a restatement of some of the original premises with a particular emphasis on individual action. Implicit to this model is the idea of "individuals negotiating their way through the organisational constraints of actively interpreting, challenging, accepting, and recreating their social environment as limited to a style of discourse consistent with the constitutive premises of that environment" (Rayner, 1992: p. 90).

The weakness of cultural theory is that there are only a limited number of applications of the theory. Some of the applications mentioned above have borrowed research procedures from disciplines that are ontologically incompatible with cultural theory on the assumption that research procedures are neutral. The psychological studies described try to make generalisations which exclude the social context in which views are embedded. Morrow (1994) distinguishes between research methodologies that are intensive or extensive (as opposed to the false dichotomy between qualitative and quantitative methods). Whilst the methodological issues could fill another paper of this length, it is worth noting that the basic trade off is between depth of understanding and potential for generalisation. Psychometric and economic theories tend to employ extensive methodologies, whereas sociologists and ethnographic researchers tend to employ intensive methodologies. Social interaction is so central to cultural theory that practitioners should be employing intensive methodologies in detailed case studies and then making 'comparative generalisations' (Morrow, 1994: p. 212–4). The employment of extensive positivistic research methodologies is confusing and, for the most part, inappropriate for cultural theory. A powerful line of research would be to reunite this rich anthropological theory with the methods of that discipline. Much of the theoretical discussion around cultural theory will remain speculative unless grounded in a rich bed of detailed case studies.

Cultural theory, deliberative processes and trust in institutions

We conclude with the observation that cultural theory may have a valuable contribution to make to the emerging theory on deliberative process. Cultural theorists have developed normative guidelines that we explore briefly below and these will feed into the discussions relating to the importance of building trust between different groupings and the civil state, and transcending the sometimes unhelpful concept of 'risk perception'.

The normative implications of cultural theory are rarely emphasised. They are necessarily procedural because the theory demonstrates that there are fundamentally different representations of nature, as conceptualised in Figure 3. This has been referred as *essential cultural pluralism* (Schwarz & Thompson, 1990: p. 54) and it leaves us with a question: which view should prevail and what does cultural theory offer to inform the policy debate? Douglas & Wildavsky (1983) argue that the plurality of rationalities is a source of strength rather than weakness, hence they advocate the repoliticisation of risk. Their view of the sectarian

institutions at the 'Borders' of US society is that they form as critical arenas that reflect what Habermas calls a 'legitimation crisis'. The critical 'Border' confronts some of the contradictions generated by the two mainstays of the industrial nation state: the bureaucracy and the market. It was a powerful movement in the US because it gained such widespread popular support. In particular, sects act as a counterweight to centralising and objectifying tendencies of bureaucracies and force more active debate about power and authority. The advice that they offer is that if the "center were to ignore the sayings of shaggy prophets, it would close itself to criticism and loose the power of reform" (Douglas & Wildavsky, 1983: p. 189).

The normative procedural recommendations of cultural theory are that 'fairness' is of prime importance. The cultural biases of different institutions are so fundamental to their reproduction through time that it is pointless to try to reconcile their different representations of nature. Hence to answer the question "How safe is safe enough?" there can be no satisfactory answer for a sectarian organisation. The fundamental problem of maintaining membership means that they will continue to evoke dangers:

> Risk ... is immeasurable and its unacceptability is unlimited. The closer the community moves toward sharing their views, the faster the sectarian groups move on to new demands. (Douglas & Wildavsky, 1983: p. 184)

Rayner asks instead "How fair is safe enough." This procedural emphasis on fairness is important because it means that the issues of power and authority that are often obscured by the clashes between contradictory representations of nature can be addressed. The conventional risk equation $R = PM$ is replaced by the equation $R = TLC$. This changes the emphasis to trust (T), liability (L) and consent (C).

With an emphasis on fairness, Ortwin Renn and his colleagues (1995) looked at how democratic procedures should be based in terms of building trust, including representativeness, generating non-distorting communication, and reaching open consensus. The key issues here are *inclusiveness* and *consensus building*. This is a complicated literature, but the nub of the issue is as follows:

- *Trust* is only possible if interests feel connected, respected, listened to, and inclusive.
- *Representativeness* is only possible if all participants are networked to all their constituent interests. This can best be achieved by the kinds of social impact connectors outlined earlier, and undertaken by local 'facilitators'. These are invaluable people who bridge individuals to their respective interest groupings, as much by awareness raising as by direct communication.
- *Inclusiveness* is only possible when all the relevant parties are connected and trusting of one another. Inclusiveness is an outcome, not an input. It cannot be designed in: it is created by a successful process.
- *Fairness* is the most difficult to ensure in a democracy. Fairness comes out of empowerment, which in turn is a product of genuine respect, and the revelation that other interests are part of one's own self interest. To achieve fairness, therefore, there needs to be agreement about what principles underlie justice and appropriate treatment amongst the various social groupings involved. This is unlikely to be reached without a process of consensus building, the result of confidence in the process and in one another, and appropriate use of compensation or liability rules.

There are broad principles for participatory democracy. Of interest here is how people trust the institutions that create and regulate risk. For the extent to which they have faith in deliberation will be influenced by degree of trust. To tap this sense of trust, one can go to

Table 2. *A risk is less acceptable if knowledge is withheld from the people who are exposed to it*

Archetype	Responses
Isolates	Science cannot be trusted, so knowledge is never reliable
	We all opt out of society every day so we deserve to get what we avoid solving
Hierarchist	People have a responsibility to find out the dangers they face
	Public protest is necessary to ensure good quality information
Individualist	People should trust themselves to get informed on personal (inner) risks
	People should find out whom to trust regarding quality knowledge for societal (outer) risks
Egalitarian	Governments and corporations cannot be trusted to inform because they are fuelled by vested interests
	Knowledge is corrupted even when it is made available

cultural solidarities for guidance. But the conceptual and methodological issues already raised cannot be ignored.

In a study of Norwich residents reported by O'Riordan *et al.* (1997: p. 21–27) focus groups were created on the basis of the Dake questionnaire and validated by consistent responses to a long interview. As was pointed out above, only 14% of respondents fitted consistently into the grid–group categories so the study as a whole suggests that the grid–group labels cannot be usefully attached to individual perceptions independent of context. A more likely explanation is that the grid–group archetypes coincide with common psychological types, such as those represented in the Myers–Briggs test or those relating to measures of locus of control (Kline, 1993). We argue that the focus groups reveal that issues relating to trust and legitimacy are pervasive across a range of psychological types. The labels have been borrowed from cultural theory in lieu of the appropriate psychological archetypes and point to an interesting line of future research. The results in Table 2 are in the form of responses to the question: *a risk is less acceptable if knowledge is withheld from the people who are exposed to it.*

The focus groups revealed a remarkable homogeneity amongst this minority group of participants, none of whom knew each other beforehand. Whilst the discussions in the focus groups covered a range of issues, a number of themes recurred consistently within each of the four groups. These are set out in the following summaries:

- *Fatalists:* risks faced in today's society were seen as part of an increasingly complex modern life, which overwhelms the ability to make sense of it. Pessimism was expressed about any beneficial changes which could occur with respect to public health and other risks in present society, and participants believed that anyone could 'fiddle the statistics', and that you should trust no-one but yourself.
- *Hierarchists*: risks were perceived as being set in global institutional frameworks, rather than in personal lives, and that people had a right to be informed by reliable sources giving the best information about the risks in their lives. Honest reporting, trial and error and knowledge gained by experience were seen as essential characteristics of good risk communication.
- *Individualists*: the emphasis for this outlook is on personal responsibility, towards the gathering of correct information, and maintenance of social networks that can provide this. Responsibility is devolved to an individual level, where others can be activated into collective action, but collective mechanisms of operation are not maintained for their own sake.
- *Egalitarians*: risks are perceived as being embedded within a much deeper set of social anxieties, and the current mode of risk management and communication in society is seen

as inflaming rather than dispersing these anxieties. Only structural change in society can bring about change in the ways risks are dealt with, and the evolution of democratic processes and public participation was seen as part of this change.

From these analyses, we can see that a risk communication programme that focuses on the substance of the message would be unlikely to please everyone. Instead, the results of this study support the procedural and deliberative emphasis of the cultural theorists and of Renn and his colleagues (Renn *et al.*, 1995).

We conclude from this piece of analysis that perception of risk is located in two sets of psycho-social processes.

- *As individuals* we look for pools of supportive attitudinal perceptions when responding to information, or communication, about risks. These pools are generally stable, but may 'pour' into other pools if the nature of the communication requires some sort of 'conclusive' reinterpretation. This took place for many in the early days of the BSE crises, and, we believe, is now occurring for many in the light of the genetically modified organisms (GMO) controversy
- *As cultural types*, we develop outlooks on the world, in relation to social solidarities and these provide us with a set of judgements about the fairness and reliability of communication about risk, and how that should be handled in the form of trust worthiness.

Put these two together, and there is a complex, but predictable basis for developing communication as setting up risk regulatory institutions.

Possible applications of cultural theory for health risk management

We argued above that cultural theory suffered from a lack of broad base of empirical applications. Rayner's (1993) study of a hospital provides a good example because it focuses on the interactional structures within the hospital and treats the organisation not as a unified whole but as clearly differentiated regimes of associated cultures. Cultural theory has an analogous role to play in making more sophisticated the expert–lay dichotomy as it relates to risk issues. In focusing on groups and their role in the politicisation of issues it can furnish more complex interpretations from a more neutral position. In interpreting politicised risk issues it is useful to address who is being blamed and why that might be the case, because this process reinforces the social structures allocating responsibility.

In the first half of this paper we described risk in polythetic terms and distinguished between risk as safety and risk as an inherently political concept. Risk as safety is of central concern to health risk management and medicine. This body of knowledge is applied to reducing the physical dangers to which we are exposed, and cultural theorists would have little argument with the real benefits that this has brought to society. In the majority of cases, the advancement of the frontiers of knowledge in health risk management proceeds uncontroversially. In a small number of cases, risk issues become highly controversial and hence politicised, using up a disproportionate share of time and resources. The most familiar examples include BSE and the GMO debate (Irwin, 1995) and these issues may be symbolic of a wider trend in late modernity. Beck (1990) argues that we are at a transitional stage in society, from being predominantly concerned with risks that are natural in origin to being concerned with risks that are anthropogenic. Whilst Beck's thesis is not entirely compatible with cultural theory, it does raise the issue of who is to blame. As we described above, risk concerns are employed forensically in an ongoing debate about the legitimacy of power relationships in society, and hence concern about risks that are industrial in origin reflect

concerns about the uses to which technologies are being applied. The social debate about GMOs is a good example (see Grove-White *et al.*, 1997). Much of the debate focuses on concerns about the *safety* of genetically modified organisms and engages in substantive conflicts between different scientific analyses. Cultural theory suggests that the real problem is not the substantive issue but the wider moral questions regarding the appropriateness of applications of technology and the processes by which decisions are made. The danger comes not so much from the presence of physical hazards but from the transgression of norms that inhere to particular social groups. The interaction and conflict between different constructions of risk issues ought to be seen as a valuable part of social discourse. As a body of knowledge built around the expert, medical research is strongly hierarchical and creates strong asymmetries of knowledge and hence power. The commercial interests associated with the development of GMOs also tend to systematically shape the issue in self-referential terms. These two groups are analogous to the 'Center' described by Douglas & Wildavsky (1983) and they have similarly excluded certain aspects of the risk issue. The critical 'Border' attempts to reintroduce moral issues into the debate through opposition and dissent, and therefore represent an important precautionary brake on unabated technological advancement. Whilst the response of the 'Border' is to invest in a substantive effort to reduce uncertainties (an impossible task because you can never be sure of what you don't know) cultural theory and deliberative theory would emphasise the processes by which decisions are made. These must be guided by the principles set out above, and these should be developed further with the aid of detailed intensive case studies.

At the micro level of health interventions, issues relating to power are also extremely important for understanding the risks individuals choose to expose themselves to or choose not to avoid. Rather than reducing these choices to psychometric predispositions, cultural theory provides a framework to help understand how those seemingly 'irrational' choices are shaped by the social context. Durkheim's famous analysis of suicide is a good example of this approach. The presence of a strong knowledge asymmetry creates difficulties for health interventions because, in the absence of trust-securing mechanisms that make that asymmetry legitimate, 'health advice' is reduced to a simple act of authoritative power.

Methodological issues have also been neglected in the application of cultural theory to industrial societies. We would suggest that there is potential for cross-fertilisation between the intensive and inductive medical research embodied in grounded theory (Strauss & Corbin, 1990) and cultural theory; a paper is currently being prepared on this issue.

Conclusion

In concluding we argue that in a field where knowledge is the primary resource and form of capital, there has been insufficient attention to the processes which shape the nature of interaction between different social groups. This is deliberative science in the making, and it will be enormously influenced by the application of cultural theory. For this theory can help to identify the various strands of interest, explain how values and outlooks are shaped and connected, and enable facilitation of deliberation so that new frameworks of trust are built up. In other words, the controversial risk issues will remain unresolved until the emphasis is shifted from more substantive scientific research around illusory concepts such as 'objective risks' toward better deliberative processes that create legitimate decision-making structures. The current genetic modification of food debate would benefit enormously from such a process (see Grove-White *et al.*, 1997). So far the government has not seen fit to respond to that message.

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