

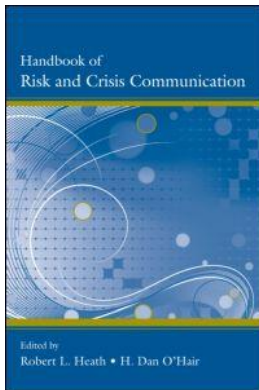
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3

Cultural Theory and Risk

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Cultural theory was first applied to risk and environmental problems in the early seventies, although it builds on a lineage that can be traced back over a century through the work of Mary Douglas and Edward Evans-Pritchard to the work of Emile Durkheim. By focusing on the inherently political character of risk controversies, it offers an approach to the interpretation of risk issues that contrasts starkly with atomistic economic, engineering and psychometric approaches. While many have come to know the theory through the grid-group typology of institutional forms, we spend the first part of this chapter describing the broader theoretical foundations of the theory. This context is essential to the correct interpretation of the typology. In the second part of the chapter, we describe the typology in more detail and show both how it can be used as a descriptive tool to predict patterns of risk and policy responses associated with specific institutional forms.

The typology itself is a heuristic device that describes four archetypal cultures or as they are now often called, solidarities, and was developed from a wide range of sociological and anthropological studies. It can only be properly understood in the context of the wider theory from which it is derived and with the caveats that were originally attached to it. Over the last decade it has been taken out of this context in a number of studies and commentaries, most recently Boholm (1996), Rosa, (1998), Sjöberg, (1997), Sjöberg, (1998)¹ and has been distorted beyond recognition. The first purpose of this chapter is to set the record straight by setting out a brief sketch of the much broader body of literature from which Douglas' expeditions into the field of risk were mounted. The typology is presented in the second half of this chapter in the context of this wider literature. But it is not enough to show that cultural theory has been misunderstood. It is crucial to show how and where this approach remains relevant to current risk research, relative to the recognised clusters of risk theories.

In the third section of the chapter, we discuss some of the contemporary applications of cultural theory to issues of trust, pluralism, democratization and risks associated with new and emerging technologies.

The disjunctures between social theories of risk (Krimsky & Golding, 1992; Renn, 1998) reflect both ontological differences (addressed here) and epistemological differences. The ontological differences are most apparent, and typically one can distinguish between two approaches. One is agent-centered and derived from rational utility approaches that focus on the capacity of individuals to conduct a complex calculus of costs and benefits, under the unconscious influence of pervasive

heuristics such as ‘dread’ and ‘familiarity’. In order to compare risks systematically across all the areas in which society might intervene in matters of life and death, the first school needs a model of individual rationality that is fixed and invariant. This is necessary in order to make the social production of safety subject to traditional scientific methods and standards. Socio-cultural approaches emphasize that social institutions exert a deterministic influence both on the perception of risks and on social action. Socio-cultural approaches recognise that societies cannot function with the mechanical efficiency of a well-oiled machine, producing outcomes that systematically identify, characterize and reduce the hazards to which the population is exposed. Moreover, as we show below, risk issues are inextricably linked to the never-ending conflict over the legitimacy of power relations in society.

In seeking to demonstrate the relevance of Douglas’ work, it is worth considering the popular risk amplification framework. This framework suggests that social institutions alter the risk signal and amplify or attenuate the perception of dangers. This general macroscopic framework tells us what happens but not why. The untapped value of cultural theory is that it contains a thoroughly institutional theory of social action, which could be employed to populate and explore this framework. While many cultural accounts either leave culture unexplained, or reduce the individual to the status of automaton, Douglas’ political sociology starts from the assumption that collective social action is hard to generate and sustain and that struggles over the legitimacy of power and authority are constant. Change, in this analysis is easier to account for than stability.

NEO-DURKHEIMIAN EXPLANATION

Cultural theory finds its origins in the work of Durkheim (1995) and Fleck (1935) but has been modified over the past century by a number of contributors, most notably Evan-Pritchard (1937). Durkheim’s contribution to social theory was to argue that the values and beliefs that individuals hold must be interpreted in the social context in which they are actively employed, since he considered that culture exerts a strong or mechanical influence over cognition. Giddens (1984) described the functional form of explanation that emerged from Durkheim’s work as distinctly different from Cartesian explanations where subject and object are separated. In place of a linear causal model that is the result of giving either agency or structure deterministic qualities, functional explanations identify feedback loops in order to account for the unintentional production and maintenance of social institutions. Douglas continued this functionalist tradition by exploring the beliefs of individuals in a particular social context relative to how they act. What matters is not what people believe, but what they do with those beliefs. At the heart of her work is a dual concept of culture as classification and contention (Pardon, 1999); the remainder of this section is organized around these inseparable themes.

Pursuing Durkheim’s interest in the social factors controlling cognition, Douglas focused on the social institutions that produce the classifications deployed in the most fundamental of human activities: that of sense making. Social classifications impose order on the complex and unpredictable flux of human experience and enable collective social action. Douglas’ theory focuses on the importance of ritual action in this process of sense making and hence argues that:

As a social animal, man is a ritual animal. If ritual is suppressed in one form it crops up in others... Without the letters of condolence, telegrams of congratulations and even occasional postcards, the friendship of a separated friend is not a social reality. It has no existence without the rites of friendship. Social rituals create a reality, which would be nothing without them. It is not too much to say that ritual is more to society than words are to thought. (Douglas, 1984, p. 63)

The implications of the social construction of reality debate have preoccupied scientists for many years. In the Durkheimian tradition, institutions supply the metaphors and analogies of which mental models are constructed:

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)

Durkheim’s approach sometimes suggests that society is the individual mind writ large. This aspect of his work has been criticized for its mechanical determinism, since it implies that social institutions map exactly on patterns of cognition (Douglas, 1986, p. 6, 1999). Boholm (1996) wrongly accused cultural theory of the same error even though Douglas described culture as dynamic, “an ongoing, never resolved argument about the rightness of choices” (Douglas, 1992, p. 260). Individuals constantly and actively question social classifications and the patterns of authority they represent, indeed the functional role of this process is to ensure that power is legitimated (c.f. Beetham, 1991).

The notion of determinism is misleading and should be replaced with the term “constraint.” Institutions constrain what will be taken seriously in a given context and define the conditions under which a statement will be taken seriously and treated with felicity (Haugaard, 1997). No amount of structural determinism prevents us from saying the words “Cats are a sign of good luck,” but it will not be met with felicity in a biology class. The same is true at the level of formal social institutions: “individuals negotiating their way through the organizational constraints of actively interpreting, challenging, accepting, and recreating their social environment are limited to a style of discourse consistent with the constitutive premises of that environment” (Rayner, 1992, p. 90). There is nothing to prevent an individual making any statement they choose, but it will only have the power of an utterance if it meets with felicity (Foucault, 1980; Haugaard, 1997). More importantly, there is nothing to prevent an individual from acting in a way that may be deemed inappropriate, but institutions structure the availability of social and economic incentives. As will become clearer below, pollution and taboos are deployed when other incentives are not available and dangers are mobilized to defend moral norms.

Social construal implies the selection of some social facts for special emphasis and some for avoidance. For instance, Douglas (1986, pp. 81–90) suggested that the professional academe of psychology has consistently ignored the effect of sociality on cognition because it is organized around the emancipatory goal of individual liberation from conventions and socialization processes. The notion that cognitive heuristics have social origins is antithetical to the central axiom of the discipline and claims to the contrary are treated with infelicity. The power of the functional form of explanation is that values and beliefs that have power in society are inseparable from the institutions that sustain them—the same institutions that mobilize the benefits of collective action. Hence, Douglas instructed us to treat the processes of classification and contention as inseparable, since the dominant concern in any social context is how to organize together in society.

Focusing on culture as contention, Douglas argued that since individuals are conscious agents, they are aware of the demands being made on them by others that share the same institutional context. The consequence is that that power and authority are always precariously held and are constantly sensitive to change. The essential message of her brand of functionalism is that there is a constant irreconcilable tension between individual agency and power. Douglas (1986) made an elegant case for functional explanations in social science, indicating that it is not functionalism *per se* that is problematic but bad functionalism. The challenge is to describe the rational foundations for collective action without resorting to a number of alternatives for explaining social solidarity that are considered unsatisfactory. Douglas discounted various forms of social glue that provide essentialist or purely intentional explanations for social solidarity. For instance, Olson (1965) described two special cases where collective action may emerge from latent groups: smallness of scale (individuals are tightly bound by conditions of mutual reciprocation and trust) or coercion (individuals have no choice). Both can be discounted since there are numerous examples in the anthropological literature where either smallness of scale fails to result in collective action or where collective action is evident despite the absence of coercion. The social glue Durkheim employed

to explain the strength of mechanical solidarity in pre-modern societies was the emotion produced by religion but as Douglas pointed out, “Religion does not explain, religion has to be explained” (Douglas, 1986, p. 36). Finally, forms of explanation that suggest that collective action is catalyzed by psychological needs for emotional security, acceptance and recursiveness are discounted. This precludes Giddens’ argument that social institutions are stabilized by the essential need for “ontological security.” Such psychic explanations may explain some effects some of the time, but are insufficiently robust, representing society as conservative and social structures as the product of human emotional fragility.

The feedback loops that maintain institutions in a functional explanation are the unintended consequences of behavioral effects. Elster (1983) set out the logical steps and conditions for a robust functional explanation and suggests that they would almost never be fulfilled. In contrast, Douglas focused on latent groups to demonstrate that a functional explanation is viable even where there are limited individual benefits available as incentives to collective action. The critical variable is the ratio between the cost of membership and the benefits of collective action. Where the ratio is low, this creates an underlying tendency towards fission, since each individual has the threat of withdrawal on hand where the demands of the group become cumbersome. The unintended effect is that only a weak form of leadership can emerge, since individuals are highly cognizant of demands upon them. Secondly, individuals protect their commitment to the group by insisting on equality and full participation. While the intention behind this behavioral effect is to prevent free riding, the unintended consequence is to create a stable boundary around the group defining those classified as insiders and those classified as outsiders. Finally, in the absence of strong consensus for formulating rules or for punishing deviance, mutual accusations of betrayal are the only strategy for ensuring mutual accountability. The model that Douglas and Wildavsky (1983) present fills in the logical steps that were missing in the account of the formation of environmental groups in *Risk and Culture*. The explanation of collective action appears pessimistic and resembles game-theoretic formulations, but it explains the minimal conditions for the appearance of collective action from latency. Thompson, Ellis, and Wildavsky (1990) developed analogous explanations for different contexts and Grimen (1999) has developed this logical approach to functionalism further. Where there are greater benefits of collective action, for instance in hierarchies, there is less of a propensity for fission. Nonetheless, hierarchies must work hard to legitimate the distinctions they create. For example, one can read Hobbes’ *Leviathan* as a cultural account constructed to legitimate the authority of sovereign rulers through appeal to the order they create, in contrast to the chaotic state of nature, where life is ‘nasty, short and brutish’.

Douglas suggested that conventions are legitimated and reified through analogy with what counts locally as natural. Consider how in western society, competition in the biological theory of natural selection is used to support the ‘naturalness’ of individualism. Nature is a strategic resource mobilized to support truth claims and categories in nature mirror and reinforce conventions relating to social practices (Douglas, 1999 [1975], pp. 256–260). In this account, and resembling Foucault’s assertion that power is pervasive at all levels, “social institutions, classification, thought and ideas are at bottom *political* because they express, mobilize and trigger patterns of power” (1999, p. 9). Power comes center stage in the never-ending concern with the distribution, organization and exchange of accountability and responsibility (Douglas, 1999 [1975], pp. 284–309). Douglas’ central argument is that mishaps, misfortunes and risks are mobilized in the process of holding those wielding power accountable. These mechanisms are present in all societies from the remote preindustrial societies studied by the anthropologists of the early twentieth century to contemporary western societies and it was from this perspective that Douglas first launched her foray into the risk literature.

A number of caveats must be mentioned at this stage. Firstly, unlike earlier functional explanations, the neo-Durkheimian approach does not apply to whole societies but rather to the multifarious social institutions of which they are composed. There is not only a need for accountability within institutions, but also between institutions as they compete for power and influence and forge settlements in society. The greater popularity of the approach inspired by Douglas in the field of political science is a result of the power of the theory in explaining the political nature of social life (Thompson,

Grendstad & Selle, 1999, Thompson et al., 1990, Coyle & Ellis, 1994, Hoppe & Peterse, 1994). Secondly, the emphasis on functionalism in this section does not preclude intentional explanations where individuals deliberately produce collective action (Thompson et al., 1990; 6, 1999), although the constraints on power and authority remain.

The neo-Durkheimian approach has been applied to a number of topics and Douglas has focused on what happens when beliefs and practices meet with infelicity. Contra Rosa (1998) the neo-Durkheimian version of constructionism does not imply a relativistic argument that all knowledge claims are equal. Some beliefs are antithetical to the institutions of power and authority, and every effort is mobilized to exclude them. Hence, when Christian fundamentalists mobilize against abortion, they seek to protect their god's unassailable authority to decide between life and death. Douglas' approach has been to study aversion and identify the rules for what is reprehensible, since this is often much less ambiguous than what an institution supports. Hers is a theory of rejection (Douglas, 1986)—a forensic approach that uses dangers, taboos and risks to reveal the internal structure and systems for accountability and responsibility of cultures.

RISK, DANGER AND TABOO: SIMILAR BUT NOT THE SAME

Douglas' goal in the field of anthropology was to challenge the orthodox interpretation of the pollution myths and taboos of non-industrial societies. Her mission was to challenge the dominant analyses of these societies that suggested some fundamental cognitive disjuncture between "them and us" (Douglas, 1992, p. 3). Her alternative to explanations of witchcraft, taboos and pollution that relied on notions of "primitive mysticism" was to argue that these activities play a role in maintaining particular social institutions. Furthermore, social concerns over purity, dirt and pollution perform analogous social functions in modern secular and religious societies (Douglas, 1984, 1970, 1992). These insights have been summarized and reviewed in a number of accounts (Pardon, 1999; Lupton, 1999; Wuthnow et al., 1984).

For example, during her fieldwork with the Lele of Kasai, Douglas (1963) recognized that a number of animals had particular symbolic and political significance within that society. Everyday food rules in that society were a subtle form of politics, which served to represent and reinforce social distinctions. Social taboos specified which social strata within the tribe were allowed to eat particular animals. The most revered animal was the pangolin, which was deemed poisonous to all except the highest initiates. Douglas argued that the functional role of such cultural practices is to maintain social order and to reproduce a differentiation of roles. The everyday practices of the Hima of Uganda, recounted in *Risk and Culture* perform an equally important function by providing explanations for seemingly independent events. In the case of the Hima people, it was believed that if women come into contact with cattle that the cattle will become sick or die or that if a woman is adulterous that her husband will receive a fatal arrow wound. The function is to attribute an act that transgresses moral norms with foreseeable yet undesired consequences. Douglas (1990) argued that most cultures develop a common term to moralize and politicize dangers. Pollution myths perform a special role in the struggle to maintain a moral order. Amidst the uncertainty, political and economic forces are mobilized on a daily basis and pollution and taboos are mobilized when other sanctions are inadequate (Douglas, 1984, pp. 131, 140).

The concept of sin in Christian societies performs an analogous function by attributing certain actions inconsistent with institutional conventions with the power to cause negative consequences in this life or the next:

The very name of the sin is often a prophecy, a prediction of trouble...first comes the temptation to sin, and then the thought of future retribution, then warnings from friends and relations, attacks from enemies, and possibly a return to the path of righteousness before the damage is done. (Douglas, 1984, p. 6)

At issue is not the validity of taboos or beliefs in dangers, indeed Douglas pointed out that in the pre-industrial world where life expectancy is short and infant mortality high that “[starvation, blight and famine are perennial threats. It is a bad joke to take this analysis as hinting that the dangers are imaginary” (Douglas, 1984, p. 8). Similarly, the reality of risks is rarely subject to dispute. The conflict is most often over the magnitude of the risks and over who is responsible for them. The process of construal described above implies that social institutions attribute the causes of (real) dangers with behavior that is collectively disapproved of. The conservative function of attribution is only half the story. The act of attribution is also a sense-making activity. The classifications and categories of institutions enable order to be discerned in the stream of events engulfing individuals, filtering out some perceptions and combining others (Rayner, 1991; 6, 1999). The more profound implication of this argument is that institutions generate emotional responses to risk events. Just as the aversion to pollution taboos produces a real physical response in the examples above, so the fear of “perceived” risks produces real emotional reactions upon which individuals act.

In her quest to vindicate pre-industrial societies from subtly racist charges that they had failed to evolve to the sophistication of industrialized societies, Douglas looked for analogous functional mechanisms in the West. While environmental risks were discussed in the first edition of *Implicit Meanings* (Douglas, 1999 [1975]), more common themes included everyday conventions related to dirt and hygiene (Douglas, 1984). Social norms that define what counts as dirt describe objects that are ‘out of place’ in the social order. Shoes are not inherently dirty; they become classified as dirty when they are placed on a kitchen table. In a fundamental sense, the functional role of this attribution process is to defend social order as a sense-making activity. Douglas also showed that the moralization of misfortune was common in the west. In the early stages of the AIDS epidemic, there was so often speculation that infection was the result of behavior believed to be immoral—such as homosexuality or promiscuity—that one would have to assume that a virus was capable of moral judgement (Douglas, 1992).

In an essay entitled “Environments at Risk,” Douglas drew explicit parallels between the tribal and the modern condition:

We are far from being the first civilisation to realise that our environment is at risk. Most tribal environments are held to be in danger in much the same way as ours. The dangers are naturally not identical. Here and now we are concerned with overpopulation. Often they are worried by under-population. But we pin the responsibility in quite the same way as they do. Always and everywhere it is human folly, hate, and greed which puts the human environment at risk. (Douglas, 1999 [1975], p. 204)

The everyday practices of the Hima of Uganda, recounted in *Risk and Culture* (Douglas, 1983) perform an important function by providing explanations for seemingly independent events. In the case of the Hima people, it was believed that if women come into contact with cattle that the cattle will become sick or die or that if a woman is adulterous that her husband will receive a fatal arrow wound. The function is to attribute an act that transgresses moral norms with foreseeable yet undesired consequences.

Among the verbal weapons of control, time is one of the four final arbiters. Time, money, God, and nature, usually in that order, are universal trump cards plunked down to win an argument. (Douglas, 1999 [1975], p. 209)

These verbal weapons help to entrench beliefs in ways that reflect the distribution of power in a particular social context. Douglas (1990) argued that most cultures develop a common term to moralize and politicize dangers. Pollution myths perform a special role in the struggle to maintain a moral order. Amidst the uncertainty, political and economic forces are mobilized on a daily basis and pollution and taboos are mobilized when other sanctions are inadequate (Douglas, 1984, pp. 131, 140).

While risks and sins function both to account for past events and to constrain future behavior they must also be distinguished (Douglas, 1990). Sins and taboos bind individuals into institutions and also make collective benefits available. Risk, in contrast, “is invoked to protect individuals against the encroachment of others” (Douglas, 1990, p. 7) and in this sense it is the reciprocal of being in sin.

In industrial societies cultures risks are morally charged, and ecological crises are considered to have emerged because of immoral human action. The fragile state of nature reflects the fragile state of society or as Wuthnow et al. (1984) argued “the sudden appearance of troubled nature reveals troubles in that society” (p. 95). Pervasive and ominous risks are selected and serve to reinforce social solidarity among emergent groups, reinforcing boundaries and assigning blame to what is perceived as a corrupt leadership. In seeking to make claims about the generality of these mechanisms, Douglas (1992) argued that:

The modern concept of risk...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, (p. 28)

This central notion, that the political mechanisms of sense making, accountability and control are continuous and consistent across all human societies and that, essentially, boundary crises are managed through risk controversies, is a central contribution of cultural theory.

CULTURAL THEORY AND THE ENVIRONMENT

The relatively recent emergence of the concept of risk can be traced to the deliberations of merchants over the benefits of financial transactions relative to the costs. While originally couched in neutral terms as incorporating both costs and the benefits, the term has evolved in modern times to refer primarily to negative outcomes. Modernity is characterized by emancipation from the seemingly arbitrary truths of religion and tradition and hence sin and taboo are no longer effective; they no longer mobilize social power. While the concept cannot be reduced to a single definition, one of the common features of the family of definitions (Rayner, 1992) is the commitment to the production of safety: systematic increases in longevity and the taming of natural hazards. The consequence is that the unified self is reified and appears “self evident” (Douglas, 1999 [1975], pp. 252–283):

The modern concept of risk...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)

In other words, the modern concept of risk is the product of the large-scale institutions that characterize modern societies. Individualism as it is commonly understood is the product of the legal system, the medical system, the democratic vote and even conspicuous consumption.

Cultural theory argues that risks are defined, perceived, and managed according to principles that inhere in particular forms of social organization. The cultural theory of risk perception first entered public policy debates with the publication of Michael Thompson’s paper “Aesthetics of Risk: Culture or Context?” in Schwing and Albers’ (1980) landmark volume *Societal Risk Assessment: How Safe is Safe Enough*. Since that time, the theory has been the focus of widespread debate in both scholarly and policy communities.

Cultural theory differs from other approaches to risk perception, risk communication, and risk management in several important ways. Almost without exception, attempts to understand human

behavior related to technological risk assume that it is a response which follows from an external event, an activity, or a statement of the probability and consequences of an activity. The conventional order of risk events is assumed to be as follows: The external risk stimulus causes an individual risk perception, which may be the subject of attempts at risk communication, leading to risk management efforts to prevent the unwanted event or ameliorate its consequences.

This ordering is implicit or explicit in both the natural hazards research tradition and in psychometric risk studies, although the histories of these two approaches are quite separate (see Krinsky & Golding, 1992). This model of perception is that of vision or hearing rather than that of touch or taste. The perceiver essentially is the passive recipient of an independent stimulus, rather than an active agent, like a baby, groping with or sucking on the world in the search for information. The risk perception problem in these approaches is to account for the discrepancy between some people's estimates of the risks or potential consequences of certain events and actuarial data or expert assessments.

The dominant model of risk communication essentially is one of information transmission with the goal of educating the recipient to arrive at a rational understanding of the probable risks. The main concern is how to pass quantitative information about the probabilities and consequences of events from one information bearer (the transmitter) to another (the receiver) through a medium (the channel) with the minimum of distortion (Kasperson et al., 1988). In fact, information transmission is only one part of communication which also involves developing shared meaning among individuals, institutions, and communities and establishing relationships of trust (Rayner, 1988).

The concept of management implicit in the conventional conceptualization of risk is both directive and reactive. It is directive in that it actively seeks to achieve specifiable goals of prevention or limitation through explicit procedures. Piecemeal coping, development of tolerance, and implicit avoidance behaviors usually are not considered management strategies in this framework.² Conventional risk management also is reactive in that it is the final step in the process. Its role is to solve problems that have been perceived and made the subject of communication, either as a precursor or management response, rather than to seek out issues for attention.

Cultural theory differs from conventional approaches to risk perception in that it assumes an active, rather than passive, perceiver. Furthermore, this perceiver is not an individual, but an institution or organization that is driven by organizational imperatives to select risks for management attention or to suppress them from view (Douglas, 1985). The question is not how individuals think about risk per se, but how institutions think. According to cultural theory, institutional structure is the ultimate cause of risk perception; risk management is the proximate stimulus rather than its outcome. In addition to being proactive, management strategies in cultural theory include various coping and adaptive behaviors that tend to be discounted in conventional approaches. Finally, risk communication in cultural theory emphasizes creation of shared meaning and trust over the transfer of quantitative information (Rayner, 1988). Thus, cultural theory is fundamentally a social theory concerned with dynamic relationships among human beings.

While *Purity and Danger* (1966) won widespread acclaim, Douglas' next book *Natural Symbols* (1970) was more controversial. In this work, Douglas began to systematize her insights from *Purity and Danger* to develop a typology of social structure and views of nature. This was the origin of *grid/group analysis* discussed later in this chapter.

The cosmological focus of *Natural Symbols* was much broader than environmental, technological, or human health risks. Douglas had demonstrated her interest in the cultural aspects of emerging environmentalism in a short paper entitled "Environments at Risk" (1972). However, it was not until 1978 that Michael Thompson authored the first papers explicitly linking grid/group to risk preferences in the West German debate about nuclear energy (Thompson, 1982a) and among Sherpa Buddhists in the Himalayas (Thompson, 1982b). In 1982, the same year that Thompson's papers appeared in the open literature, Mary Douglas and Aaron Wildavsky published *Risk and Culture*.

In *Risk and Culture*, Douglas and Wildavsky attributed concern with cancer risks from industrial pollution in the United States to the growth of an essentially egalitarian environmentalist movement

dedicated to the elimination of involuntary exposure to danger. However, *Risk and Culture* reduces the complex societal debate about risk behavior already sketched out by Michael Thompson to a simple conflict between society's center and its border. The even-handed technical application of cultural theory to risk is pushed into the background, while an anti-egalitarian polemic is brought to the fore. The culture theoretic distinctions between markets and hierarchies are blended into the legitimate "center" of modern society, bound together by self-interested resistance to assault from a homogenized egalitarian "border" which Douglas and Wildavsky characterized as *sectarian*. While markets and hierarchies are portrayed as making rational tradeoffs among the benefits and costs of difficult technological choices, so-called border sectarians are delegitimated at the outset by the authors' choice of terminology and subsequently taken to task for employing irrational fears about nature and technology to resolve their own organizational problems. The rich cultural diversity encompassed by cultural theory as a model of social possibilities is, in effect, reduced to a traditional conflict of interests between the hegemonic capitalism of the market and the state on the one hand and its egalitarian critics on the other.

Douglas' response to the difficult reception given *Risk and Culture*, was a slim volume entitled *Risk Acceptability According to the Social Sciences* (Douglas 1985). Although it was not directly a reply to critics, Douglas acknowledged in her introduction that the controversy over *Risk and Culture* provided much of the impetus for the later work.

As in *Risk and Culture*, Douglas initially used two kinds of societies to illustrate her case about the selection of risks by active perceivers. These are the competitive, market-type society, based on contract, and the hierarchical society in which social relationships are constrained by status. While markets and hierarchies together comprise Douglas and Wildavsky's *center* of modern society, here there is more exploration of the differences between them. Rather than a dichotomy between center and border, Douglas creates a triangular space for societal disagreement about risk that includes a third kind of institution, the egalitarian-collectivist type that is frequently represented in industrial society by voluntary groups.³

If Douglas's reply to the criticism leveled at *Risk and Culture* was characteristically hierarchist in its attempt at inclusion through technical justification, Wildavsky's was the typically unapologetic response of the individualist. In *Searching for Safety*, Wildavsky (cite) abandoned defense of hierarchy altogether on the basis that it exhibits "monumental" bias towards anticipatory measures to manage risk and has difficulty making piecemeal adjustments to policies and regulations through trial and error learning. In effect, Wildavsky dismissed hierarchy in the contemporary United States as the captive of egalitarian constituencies bent upon greater equality of condition. In contrast, Wildavsky clearly identified societal resilience to unexpected hazards with the cultural strategy of markets, both because they adapt rapidly to new information and because they help to create the wealth that he regarded as the source of health and longevity.

If we allow that the concept of risk has a range of closely associated meanings, then we can use Douglas' work to look for its influence in other areas. Political activity to protect the environment seeks to sustain conventions and norms central to cultures. Burger (1990) suggested that political arguments in defense of such conventions are expressed under the only banner that will rally support—that of individual protection. In the demonstrations prior to the collapse of Soviet rule in Lithuania, the population took to the streets, accusing their communist rulers of environmental destruction. Dawson (1995) suggested that environmental protests focusing on a SovietLithuanian Nuclear Power Station were a surrogate for nationalism in a period where calls for independence would have been taboo. Risk was mobilized as a stick to beat authority (Douglas, 1992, p. 24).

Eliasoph's (1998) detailed insider account of the activities of US environmental groups supported the assertion that risks are mobilized as ace cards in moral conflicts. Employing Goffman's distinction between the backstage and frontstage roles that actors may assume, she identifies the contrast between the complex moral arguments that activists provide in private and their frontstage performances in the context of the group, particularly in front of the media. Individuals simplify their concerns frontstage and seek to give authority to their positions by selecting the features of

their concerns that will be treated with felicity: direct harm to themselves or harm to their children. Other distributive or procedural concerns seem to be constrained by the context and the desire to be taken seriously.

Douglas and Wildavsky's (1983) analysis of the politics of environmental groups in the United States has to be set in the context of the wider literature above. Read alone, the text leaves too much for the reader to infer about the meaning of culture and the analysis generalized about environmental groups (Gerlach, 1987). The analysis at the macro scale of a whole society focuses on the way technology risks are deployed by "sectarian" environmental groups associated with a critical border as part of the struggle with the "center." The "center" is composed of a synergistic alliance between bureaucracies of government and the markets. This conflict over meanings is part of a political struggle for influence in society and is deployed to secure the legitimization of power relations inherent to the governance of industrial societies.

While the "border" and "center" are poorly defined, the central point of the analysis as a twofold struggle still stands. The internal struggle is to mobilize collective action out of latency; the challenge of maintaining solidarity selects certain credible dangers for attention. The purpose of the group is to hold government and industry accountable. In pre-industrial societies, pollution myths are mobilized to defend moral norms in the absence of alternative sanctions. In the west, groups with marginal political or economic power can only exert their influence by appealing to the populace through accusations that those in power are responsible for exposing them to dangers.

Finally, a number of other core themes in Douglas' work have not been elaborated in the risk and environmental literature. Douglas' emphasis on the sociology of rejection has obscured what constitutes purity in modern societies. Wilderness in the environmental literature is often treated as the pure and sanctified ground defiled by development. In addition, research on risk-seeking behavior has received less attention, but could be analyzed through a neo-Durkheimian lens by examining the social function of such behavior. Finally, we should remember that one of the core themes of *Purity and Danger* was to examine the way that different societies deal with anomalies. By definition, one of the goals of gene technology is to create hybrids; species that transgress biological classifications. If we want some help in understanding people's aversion to these activities, then we should look to Douglas' work (Douglas, 1984; Douglas & Hull, 1992).

CONTEMPORARY RISK ISSUES: BIOTECHNOLOGY

Biotechnology builds upon and extends the work of biologists who have sought for centuries to classify species according to clear and logical phenotypical and morphological taxonomies. As a result of this accumulated knowledge, we have a generally accepted understanding of species as distinct biological types. Much of the controversy surrounding biotechnology focuses on transgenic organisms and by definition these organisms represent hybrids across categories that have been made more distinct by biological research. While the methods for combining genetic material at the cellular level are unprecedented, hybrid species have been present in many cultures including the fanciful creatures of Greek mythology such as the Minotaur and many tribal cultures including those studied by Douglas. Some, but certainly not all, modern genetic hybrids have been the focus of controversies and as the biotechnology industry expands it seems likely that more candidates will emerge. What is already clear is that some hybrid species are more controversial than others. For instance, the vast majority of corn, soy and canola production in North America utilizes genetically modified variants that incorporate genes for herbicide resistance. In stark contrast to European experience, environmental groups have been largely unsuccessful in drawing attention to the introduction by stealth of these variants.

Douglas' work (1963) comparing the food taboos of the Lele with those of the Israelites, as described in Deuteronomy may be helpful. Douglas discovered very quickly that the Lele had a wide range of food rules and that their taxonomy of species was based not on phenotype or genotype but

rather on the medium the species occupied. Since pigs live on the mud on river margins, they are grouped with fish. Flying squirrels are grouped with birds and secondary classifications distinguish between young and old animals within a species. In most cases, animals were seen as inferior but extremely fecund, while humans were considered superior but chronically infertile. In the case of the Lele, food rules were often not prohibitive but instead assigned species to social strata in ways that assumed they were beneficial for members of that strata to eat. By consuming animals, the beneficial characteristics of that species would be transferred to members of the social group although it would be inappropriate or even dangerous for others to consume the same animals. Of particular interest to Douglas was the pangolin or spiny anteater, eaten only by those men who have demonstrated that they are fertile. The pangolin is considered a hybrid or boundary crosser that has human and animal attributes. It is described by Douglas as a “scaly fish-like tree dweller, it bows its head like a man avoiding his mother-in-law. As a mammal which brings forth its young singly, it evidently does not share the fecundity which distinguishes animals from mankind. This anomaly mediates between humans and spirits and assures fertility” (Douglas, 1999 [1975], p. 272).

The Israelites have much stricter and more prohibitive dietary rules, which were formalised in the Old Testament books of Deuteronomy and Leviticus. Douglas analyzed the food rules not simply as doctrines but as products of the historical circumstances in the fourth century BC that the Israelites found themselves in. Species that are hybrids or mixtures and violate the Judaic system of classification are universally classed as abominations, to be avoided at all costs. Jewish dietary classes are based on physiology: animals that chew the cud and have a cloven hoof are deemed acceptable. In contrast, animals that only display one of these characteristics are deemed anomalous. While the pig is the best-known example, the class of animals includes the camel, the hare and the rock badger.

In an argument first set out in *Purity and Danger* and substantially revised in later work, Douglas argued that the explanation for the reaction to anomaly is a political one, grounded in the social context of the group and in the internal struggles to maintain solidarity and credibility.

Foul monster or good saviour, the judgment has little to do with the physical attributes of the being in question and much to do with the prevailing social pattern of rules and meanings which creates anomaly. (Douglas, 1999 [1975], p. 259)

The Lele, like many small fragmented tribal groups faced real concerns related to depopulation, and the pangolin cult was open to men who returned to the village in which the clan was founded. It attracted sons-in-law back to the village. The pangolin is a boundary crosser and is revered as a hybrid with human and animal characteristics. Drawing membership of the pangolin cult also helps to solve demographic problems within the village and this ability of individuals to cross clan boundaries is also revered.

The view among the Israelites was that no good could come from boundary crossing and from external exchange. The highest goal was to maintain the integrity of the group from foreign incursion. Boundaries are cherished and must be kept strong in a historical context where the Israelites were surrounded by powerful forces, tempting members of the group away through defection. They addressed the fear of the hybridization of their own identity through strong sanctions against anomalous hybrid organisms. Dragging nature in to provide greater credibility in the face of possible defections reinforced social rules governing the behavior of the collective.

These two contrasting views of hybridity contain a number of important lessons, not least of which is that hybrids are not necessarily negative or threatening. Contemporary risk discourse has tended to focus on these negative dimensions (Lupton, 1999),⁴ but we need to separate the condition of hybridity from the moral valence. This implies that there may be new explanations for the appeal of boundary spanning organisms or activities in certain cultural settings.

Both examples demonstrate a strong linkage between the real political challenges affecting the viability of distinct cultures and systems of belief about nature. Drawing on the logic of functionalist

theory, the insight of cultural theory was to see the human body as, “a conceptual microcosm for the body politic” (Lupton, 1999, p. 40), involved on a daily and mundane ritual basis to mark out, stabilize and reify the classifications that bring order and power. Political struggles, in this account, are struggles for both meaning and power. The body represents a potent symbol in the struggle for social control, and contamination or pollution of a pure interior or past body is easily projected onto the struggles to police the boundaries of the body politic.

A recent study indicates how this mechanism manifests in the context of an emerging technology: genetic biobanks. Biobanks combine genetic information, derived from human tissue, with phenotypic information related to disease manifestation. A number of large-scale biobanks have been established to study patterns of disease within large populations. The application is not primarily for quantifying disease probabilities at the individual level. Simple genetic disorders can be assessed by studying family pedigrees. Instead, these systems are used for studying aggregate associations between genetic variation and the distribution of disease.

The study explored emerging concerns about the implementation of these biobanks within Canada using a series of focus groups. One focus group targeted Canadian First Nations and elicited their response to the proposal to develop biobanks. Two broad findings emerged from this study that exemplify the utility of cultural theory. Firstly, the myth of genetic determinism has penetrated popular culture to a surprising degree and it provided a portable and pervasive resource for the focus group participants. The image of the aboriginal body in genetic disequilibrium with new environmental, chemical and malnutritional insults recurred throughout the discussion. Genetics replaces the clean body maintained by hygienic ritual from outside impurities with a molecular self, poorly prepared for colonial influence. Genetics, in some cases, is a logical trap that sustains the status quo; it both accounts for misfortune and implies that continued disequilibrium is inevitable. The discussion revealed the political struggles within the community to build and maintain solidarity. Boundaries are repeatedly marked on a colonised physical and political territory; the outsider contaminates and pollutes. Against this backdrop, the role of the specific technology is subsumed beneath the need to build and sustain solidarity across First Nations that have suffered enormously as a result of colonization.

The study shows how the institutional context selects and frames a technology in a particular way in order to support an essential political role at the level of the collective. To put it another way, the characteristics of the technology itself, in this case, a biobank, is largely irrelevant the explanation of its apparent dangerousness.

THE TYPOLOGY

While it is often confused with the theory itself, the grid/group typology was developed as a heuristic device, the purpose of which was to “gently 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). Douglas recognized the limitations of typologies and identified a number of caveats to the typology, to which those of Ostrander (1982) are added. The first is that the typology makes no claim to represent the nature of individual free will and hence is not deterministic:

the grid/group model does not preclude psychological theories of how different personality types might gravitate towards one kind of social context or another. (Gross & Rayner, 1985, p. 18)

Secondly, the typology is a static device, not a causal model designed to illustrate change. According to the framework described above, change is the norm and stability would require a special explanation. Thirdly, the typology is a relative rather than an absolute tool, so it is primarily of heuristic value. Finally, Ostrander (1982) emphasized that the typology should be applied to social institutions rather than to societies and hence is technically incapable of distinguishing whole social systems.

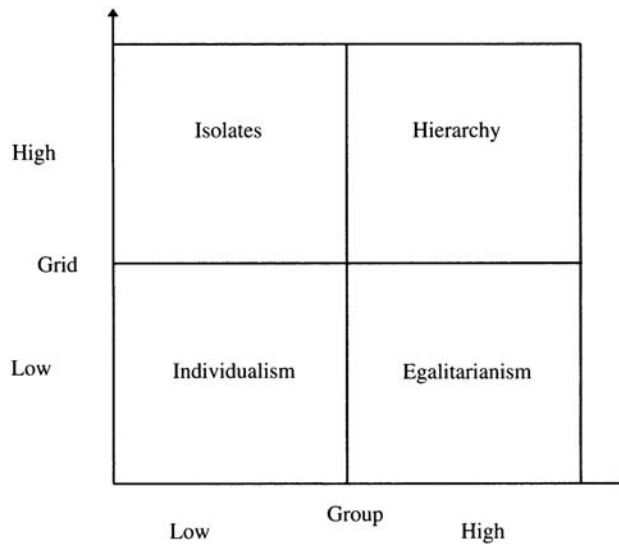


FIGURE 3.1 Grid/group dimensions and solidarities.

Douglas (1982) set out the basic assumptions behind the two axes of the typology. Firstly, she considered 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 and the axis varies from weak to strong. Secondly, she considered the extent of regulation inside or outside of the group—the grid axis. The grid varies from low to high. For instance, a military regiment with its prescriptions for behavior and rigid timetabling represents a high grid social environment. Ostrander (1982) defined 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). A more elaborate version suggests that:

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 environments in Figure 3.1 can be drawn. The labels attached to the four social environments have been a cause of some confusion. While individualism implies atomism, coordinated activity is perfectly feasible in a low group, low grid context, indeed a shared language and shared symbols of value are precursors to even the most rudimentary market. Under these conditions, coordinated activity assumes a predictable form that is distinctly different to that which occurs in a high grid, high group context.

Rayner's (1992) intensive study uses a range of methodologies to explore the different institutional contexts that operate in one complex organisation—a hospital—and the manner in which they mediate the construction of radiological risks. The culture within which surgeons interact was found to be competitive and individualistic and to foster cavalier attitudes towards the risks to which they and their patients were exposed. In contrast, the Radiological Protection Officers were responsible and accountable to the hospital management for the regulation of occupational exposures to radiation. Rayner identifies contexts that corresponded to each of the four quadrants of the typology and describes the manner in which these mediated attitudes to risk. The point was not to demonstrate how individuals were 'hierarchical' or 'individualist' but to demonstrate that the culture within which social actors operate both enables some forms of behavior and constrains others.

Traditional surveys were first used by Dake and Thompson (see Dake, 1992) in a study of households, but this data collection was accompanied by detailed ethnographic research. Dake and Wildavsky (1990) then focused on the use of surveys to examine the relationship between individual values or biases and risk perception. Their quantitative scale employs a series of statements to which the interviewee responds using a Likert scale. The statements are based on predictions from the four idealized types derived from the typology and the scales measure the extent to which interviewees agree or disagree with them. This approach has become the most popular and has ultimately subverted the central message of cultural theory to such an extent that it appears inconsistent and contradictory (Boholm, 1996). The error has been to focus on the grid/group typology at the expense of other elements of the theory in which it is grounded (see, for instance, Grendstad & Selle, 1997). The four institutional forms described by the typology are taken to refer to four idealised personality types of which the world is composed. In one step the theory is converted into a psychological theory of risk perception and the origins of the individual's bias becomes a sacred private affair. A series of studies have reproduced this error including research by cultural theorists, but the work of Sjöberg (1997, 1998) has received the most attention and so is focus of this section.

Sjöberg reproduced the quantitative component of the theory-testing framework developed by Dake and Thompson and his primary aim is to test the explanatory power of the typology. By this Sjöberg means the extent to which the personality types implied in the typology are useful predictors of risk perception; he argues that they perform badly and makes two broad points. Firstly, he distinguishes between proximal and distal variables (Brunswick, 1952). Proximal variables are direct and immediate influences on individual behaviour, whereas distal variables are more abstract. For instance, a study of child poverty in Canada (Trudel & Puentes-Neuman, 2000) suggested that poverty may be a distal variable, while maternal anxiety can be considered a proximal variable. Sjöberg argued that there is a more general problem in social research with the use of distal variables, since these tend to have low explanatory power. He favors the use of proximal variables that are associated with the target behaviour. Secondly, Sjöberg argued that researchers have taken statistical significance to indicate strong predictive power whereas the important item is the correlation coefficient. Although findings are often statistically significant, they typically explain very little of the variation in the data.

Two levels of critique of Sjöberg's work can be considered. The first criticism maintains an emphasis on the typology but questions his analytic techniques. Slovic and Peters (1998) respond to Sjöberg's critique of their grid/group survey of 1512 Americans. Sjöberg argued that the correlation coefficients in the study must be squared in order to derive the measure of variance and hence the strength of the association. When this is done the explanatory power of the analysis is vastly reduced. In response, Slovic and Peters pointed out that the use of squared correlation coefficients in medical studies is not the norm and that the appropriate measure relates to the percentage change as captured by Binomial Effect Size Display. For instance, the variance measure in a clinical trial of the drug AZT for the treatment of AIDS produced a low r^2 of 0.05 but a reduction in deaths from 61.5% to 38.5% (Rosenthal, 1990). Their own results were much more robust when percentage change measures were used. Secondly, proximal variables are considered more efficient predictors of behaviour. For example, there appears to be a high correlation between attitudes towards nuclear power stations and perceived risk of nuclear waste (Sjöberg & Drottz-Sjöberg, 1993). In contrast, distal variables are defined as dissimilar in content to the variable being explained (Slovic & Peters, 1998, p. 169).

One must question whether the strength of association between proximal variables is simply an effect of autocorrelation, since the two variables may simply reflect the same underlying attitude or belief. The second level of criticism is that the methodologies employed are simply inappropriate to the theoretical framework. The original caveats attached to the typology emphasise that it is not a psychological approach but one that emphasises distal variables. Although cultural theorists have contributed to the confusion by referring to "individualists" and "hierarchists" (for instance, Dake & Wildavsky, 1990), the proposed solution is 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, 1998, personal communication)

Sjöberg prefers a strong form of methodological individualism that sees individual attitudes as sovereign in determining risk perceptions. These disjunctures in risk research have been discussed and debated widely (Douglas, 1985; Rayner & Cantor, 1987; Renn, 1998; Tansey & O’Riordan, 1999) and syncretic efforts such as the “social amplification” approach rightly imply that theoretical diversity may be of value (Kasperson et al., 1988).

The deeper disjuncture between these approaches is methodological rather than ontological. For Sjöberg, there is only one tool suitable for the task of testing a theory—the extensive (nomothetic) questionnaire survey—which reveals the expressed values and preferences of random samples of large (typically national) populations. The test of the strength and utility of the theory is whether independent variables derived from it are able to predict the dependent variable, in this case, individual and general risk perception. Sjöberg’s detailed paper suggests that surveys using items derived from cultural theory generate only weak correlations and that ‘r-squared’ values are very low. Guilty as charged. One may hope that Sjöberg’s findings affirm what Mary Douglas and many others have been saying for years: the archetypes derived from cultural theory do not work well when used for narrow and heavily scientific psychological models of risk perception (Douglas, 1985; Douglas, 1992). Sociologists do not expect humans to exhibit the kind of mechanical rule driven behavior that natural scientists expect of the inanimate objects they study and which produce high correlations and high r-squared values. There are many reasons why we would not expect this analysis to produce the high correlations Sjöberg craves, including the weak relationship between attitudes and behavior, biases introduced by power relations in survey implementation, the generality of the risks individuals are asked to rate and fact that every variable in the survey is thrown into the multivariate analysis, regardless of whether it is relevant to the social context of the respondent’s daily life.

The most valuable contribution of the neo-Durkheimian approach is to explain why politicised debates over meaning are so central to the field of risk. So called “risk perceptions” that carry the force of social power are neither irrational nor simply psychological in origins. The context within which they are felicitous and hence rational reveals features of social institutions that are normally treated as self evident—risk has a forensic function. Whether they are described as meanings, constructions, symbols or metaphors, classifications are defended because they legitimate the distribution of social power within an institution. Risk becomes politicised not simply because it is a threat to life but because it is a threat to ways of life. Rather than ask how a risk comes to be magnified or how risk perceptions are influenced by heuristics, irrationality or pure emotion, this approach asks indirect questions: At whom is the finger of blame being pointed? Who is being held accountable? What is being rejected and what is being defended in a particular collective social action? This implies that for issues such as genetically modified organisms, research that seeks to demonstrate the safety of the technology will not dissipate political opposition since protest is in defence of a moral boundary. More subtly, cultural theory implies what Kuhn (1977) called a hermeneutic method. In place of an explanation that accuses the institution supporting it of irrationality, this approach asks how the seemingly absurd could be rational.

BROADER APPLICATIONS AND ENHANCEMENTS

While recognizing that the typology is a heuristic device, a number of authors have elaborated on the basic forms to identify patterns typically associated with the four institutional types. Each of the four types frames mundane and extraordinary events in consistent and predictable ways. For instance, drawing again on Rayner’s (1992) study of risk in the hospital environment, we can deduce

TABLE 3.1
Four Organizational Contexts of Medical Personnel Exposed to Ionizing Radiation

<i>Organizational context</i>	<i>Competitive individualist</i>	<i>Bureaucratic</i>	<i>Egalitarian small group</i>	<i>Stratified individuals</i>
Personnel	Radiotherapists, Radiodiagnosticians	Radiotechnicians, Hospital administrators	Staff of free clinics, Coalition for medical rights for women	Maintenance staff, junior nurses, cleaners
Transactional arena	Ego-based networks	Organic groups	Mechanical groups	Atomized niches
Transactional mode	Competition	Routine procedures	Cooperation	Controlled
Decision making	Individual	Committee	Consensus	Limited by others
Driving values	Expansion	System maintenance	Equality	Survival
Focus of attention	Professional career (cure)	Routinization of procedures (standardization)	Health maintenance (prevention)	Diverse

Source: Rayner, 1992, p. 13

a series of characteristics of the organizational context and establish hypotheses that can be tested empirically (see Table 3.1).

Other applications have used the typology as the foundation for more theoretical political science. Hood (1994, 1996) for instance, explores the implications of the grid/group typology for understanding the control of bureaucracies. Hood recognised that the categories define each other in opposition to one another and hence, paradoxically, are mutually dependent. In addition, each of the four types is considered to have both strengths and weaknesses, inherent to their internal structures. Some of these have been alluded to above and Hood describes them in terms of mechanisms for control over bureaucracies. In other words, hierarchical institutions have strengths and weaknesses and the other grid/group categories may counteract some of these as “forms of control.” Hood explored the four pure forms of control derived from the typology (contrived randomness, mutuality, competition and review) and also six hybrid combinations of the four types. This approach is only indirectly relevant to the issue of risk, but demonstrates the wider relevance of the typology.

Schwarz and Thompson (1993) borrowed the term “regime” from political science to describe organizational frameworks that include a number of institutional forms. This is a similar approach to a study by Gerlach and Rayner (1988) of international regimes. 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 which places institutions at the centre of the analysis (Jordan & O’Riordan, 1995a; Jordan & O’Riordan, 1997). This synthesis facilitates the application of cultural theory to global environmental risk issues such as climate change. The grid/group typology has been difficult for many theorists to swallow and recent accounts have tended to put less emphasis on the orthogonal axes and more on the competing cultural types. Hence, Thompson and Rayner (1998a, 1998b) identified three kinds of social solidarity—the market, the hierarchy and the egalitarian types—for an institutional analysis of climate change. These are represented as a policy space wherein conflict over policy formulation occurs. The isolate is left out because it tends to be politically bereft. In other words, it lacks the capacity for social power. Several accessible accounts have been produced very recently which seek to advance this approach to cultural theory (Thompson & Rayner, 1998a, 1998b; Ellis & Thompson, 1997). The three active voices identified by Thompson and Rayner (1998a, 1998b) express distinct diagnoses of the underlying causes of climate change and offer very distinct cures to the problem. The egalitarian voice of the activist focuses on profligacy in resource use, while the individualist voice focuses on inefficiency and pricing failures as the underlying causes. The third hierarchical voice emphasises population growth as the main problem.

TABLE 3.2
Climate change discourses

	<i>Hierarchical</i>	<i>Market</i>	<i>Egalitarian</i>
Myth of Nature	Perverse/tolerant	Benign	Ephemeral
Diagnosis of cause	Population	Pricing	Profligacy
Policy bias	Contractarian	Libertarian	Egalitarian
Distribution	Proportionality	Priority	Parity
Consent	Hypothetical	Revealed	Explicit
Liability	Deep pocket	Loss Spreading	Strict fault
Intergeneration responsibility	Present > future	Present > future	Future > Present
Discounting	Technical standard	Diverse/high	Zero/negative

Source: Thompson and Rayner, 1998, p. 331.

Each diagnosis is attached to a cure: frugality, price reform and population control respectively. Thompson and Rayner elaborated on this analysis to anticipate a range of institutionally determined responses to climate change. These are summarised in Table 3.2.

The diagnoses and cures are so distinct that cultural theory applies the term “contradictory certitudes,” which suggests that these differences cannot be easily reconciled. Concepts of fairness of process and outcome also vary systematically by solidarity, with each aligning broadly with literatures on egalitarianism, libertarianism and contractarianism. In the context of the climate problem, a range of predictions can be derived capturing these systematic differences (see Table 3.2).

NORMATIVE IMPLICATIONS

Cultural theorists have expended most of their effort on explaining why risks are inherently political. The typology is a useful heuristic device for generalizing about the tendencies inherent to different arrangements of power and authority in social life. Issues relating to methodology in case study research using cultural theory have been neglected with the result that inconsistent approaches which ‘test’ the typology have prevailed.

The normative implications of cultural theory are also rarely emphasized. They are necessarily procedural because the theory demonstrates that there are fundamentally different representations of nature. This has been referred to as *essential cultural pluralism* (Schwarz & Thompson, 1993, p. 54), and it leaves an unanswered question: Which view should prevail and what does cultural theory offer to inform the policy debate?

First and foremost, cultural theory transcends a number of unhelpful dualisms including the expert-lay dichotomy, which contrasts objective rationality with emotional irrationality. In its place, cultural theory demonstrates that knowledge and social structure are interdependent. In other words, social conflict occurs between competing rationalities.

Douglas and Wildavsky (1983) argued that the plurality of rationalities is a source of strength rather than weakness, hence they advocate the repoliticization of risk. Their view of the sectarian institutions at the borders of US society is as critical arenas that reflect what Habermas (1976) calls a “legitimation crisis.” The critical border confronts some of the contradictions generated by the two mainstays of the industrial nation state: the hierarchy 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 the centralizing and objectifying tendencies of bureaucracies and force more active debate about power and authority. The advice that Douglas and Wildavsky (1983) offered is that “if the center were to ignore the sayings of shaggy prophets, it would close itself to criticism and lose the power of reform” (p. 189).

The normative procedural recommendations of cultural theory are that “fairness” is of prime importance (Thompson & Rayner, 1998a, 1998b). 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, there can be no satisfactory answer for a sectarian organization to the question: “How safe is safe enough”? The fundamental problems of maintaining membership mean 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 the legitimacy of power and authority, 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).

Moving one stage further, Douglas and Wildavsky (1993) borrowed the idea of resilience from ecology. Ecologists found that frequent disturbance enhanced the capacity of systems to change and so they argue that in social systems, change allows learning to occur about how to deal with the unknown (Douglas & Wildavsky, 1983, p. 196). Along similar lines Thompson argued that instead of concentrating on modeling risks we ought to focus on “enhancing security” by “covering all the bases.” In other words, it is important to ensure that the full repertoire of management styles is available. This implies that forms of fundamentalism, referred to by Thompson (1997) as “monomania,” where all aspects of social life are dominated by one quadrant of the typology are not resilient or desirable. Along similar lines, Haugaard (1997) (not a cultural theorist) argued that: “When one way of life becomes extended to all spheres of social life, people will have to be sacrificed in the attempt to make social practice consistent with the monological world view” (p. 184).

Confronted with an unpredictable world of possible hazards the weak normative strategy of cultural theory is to ensure that there is a portfolio of possible responses. Most recently Rayner and Malone (1997) have taken a similar line with regards the theme of vulnerability to global environmental risk issues. In the light of high levels of scientific uncertainty, they suggest that policy makers ought to concentrate on increasing adaptive capacity (p. 332). In a recent article entitled ‘Risk and Governance’ the importance of plurality and resilience crops up again:

the uneasy coexistence of different conceptions of natural vulnerability and societal fairness is a source of resilience and the key to the institutional plurality that actually enables us to apprehend and adapt to our ever-changing circumstances. (Thompson & Rayner, 1998b, p. 143)

An empirical example of this use of cultural theory in practice can be found in the energy sector. The US Department of Energy’s Oak Ridge National Laboratory launched its Nuclear Power Options Viability Study in 1984 to explore the possible availability of advanced nuclear power reactor concepts in the 2000–2010 timeframe (Trauger et al., 1986). The project was overwhelmingly dominated by technical assessments of alternative designs, mostly embodying so-called passive safety features. A social science assessment of the issues most likely to influence their market and public acceptability was commissioned (Rayner & Cantor, 1987), especially in the light of widespread concerns about the safety of existing nuclear power reactors. This was a challenging task, not least because of the implausibility of projecting existing electric power industry structures, management and regulatory regimes, political priorities, economic conditions and technical capabilities some 20 years into the future.

The study assumed that there were everyday meanings for risk and rather than anchoring on the technical concept of probability times consequence, the team sought to understand how people

actually used the term in everyday speech. This approach revealed concerns about authority and legitimacy, consistent with the language of “Trust, Liability and Consent.” Concerns about consent revolved around the question of whether affected parties believed that they had been given the opportunity to accept or reject the technology in a manner that they regarded as legitimate. Issues of liability focused on whether the affected parties were satisfied that costs were appropriately distributed and that appropriate arrangements were in place to make reparation for any unwanted consequences. Trust hinged on whether the affected parties were satisfied that the institutions responsible for the commissioning, design, implementation, management, and regulation of the technology (including arrangements for consent and liability) are appropriate and adequate.

Focusing on the supply side, the utilities viewed the demand for power as a surrogate for consent to capacity addition. This is what social scientists call a “revealed preference” approach, embodying the idea that people vote with their pocket books and reveal their preferences for trade offs through their behavior in the market (Thaler & Rosen, 1975). Following John Rawls (1971), the team characterized the regulators’ approach to public consent as “hypothetical,” reflecting the idea that the social contract between citizens and government permits agencies to assume consent to specific actions. This hierarchical approach to consent is also consistent with a focus on procedural rationality. In the case of US Public Utility Commissions, power demand forecasts were often regarded as the justification for the administrative determination that a new power station could be built.

The public-interest intervenors took a different approach to consent, often arguing that the granting of a “certificate of convenience and necessity” to build a new power station should be made, or at least ratified, by popular referendum. In so doing they were demonstrating an “explicit preference” approach to consent. Significantly, commitment to explicit consent makes it impossible to impose risks on future generations who, by definition, are not available to give consent.

Looking at liability (see Calabrese, 1970), the utility companies were committed to the idea of spreading risk as broadly as possible away from the company itself. In other words, the cost of the plant, both foreseen and unforeseen, should be transferred to the customers. The utilities also campaigned for the preservation of the Price-Anderson Act that limited liability of nuclear power generators in the event of an accident. Regulators, on the other hand, adopted a deep pocket approach to costs, seeking to make a regulatory allocation of resources where they would have least impact on society—a so-called deep pocket approach. Intervenors took the opposite view from that of the utilities, seeking strict liability that concentrated responsibility for costs, losses, and accidents in the hands of directors and shareholders of utility companies. This position was clearly related to the issue of trust insofar as it was explicitly seen as a way to “keep the bastards honest,” by making them liable for failures. With respect to trust as a specific variable, it was clear that the utilities trusted good managers and successful firms.

Consistent with their procedural approach to consent, regulators demonstrated that they trust rules and processes, especially those of longstanding effectiveness. Intervenors, also consistent with their approach to consent, trust the collective wisdom of the people. Overall, the study demonstrated that it is impossible to separate technical assessments of risk from the credibility and trustworthiness of the institutions involved in creating or mediating the risk. To focus on the provision of better science is to miss the point about the ultimate foundation of risk.

The procedural solution lies in recognizing and understanding the different representations of risks and nature and in finding ways of negotiating agreement between them. Whilst there are distinct differences between the approaches to social theories of risk (see for instance, Krinsky & Golding, 1992) there is a reasonable convergence on the normative implications. The theoretical mountaineers have just taken different routes to the same destination. As Thompson and Rayner (1998b) acknowledged, there is much in common with the themes of risk society (Beck, 1992), the ideal speech concept (Habermas, 1981), and ecological modernization (Hajer, 1995). Furthermore, there is a common acknowledgement that the operationalization of these normative commitments is easier said than done.

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 the concerns about the *safety* of genetically modified organisms and conflicts occur between different scientific analyses. Cultural theory suggests that the real problem is not the substantive issue of safety 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. This suggests that increasing concern in society over environmental threats may be symbolic of wider concerns:

the uncertainty of environmental risks is paralleled by increasing uncertainty and insecurity among individuals in (mainly Western) society. The interaction of environmental and social risks may pave the way for a shift in social values. (Blowers & Leroy, 1996, p. 259)

Wynne (1996) argued the ‘Risk Society’ thesis conceives of risks precisely as such external physical threats to person which are identified and arguably caused by science. Wynne also argued that Beck and Giddens (1990) have generally failed to recognize the broader social meaning and embeddedness of risks.

The degree of social insecurity that is *felt* has been shown to be a function of structural factors such as efficacy and trust (Macnaghten et al., 1995). In the absence of these factors, individuals feel alienated and apathetic. Indeed, it has been argued that existence of normative positions within social groups is contingent upon a belief in the possibilities for agency or efficacy:

the sense of moral obligation was also supported by feelings of efficacy—the sense of individual control over the outcome of their actions, and a demonstration of the worth of what they had done. (Harrison et al., 1996, pp. 217–288 in Eden, 1992)

In terms of the model of power set out in the sections above, social actors feel threatened not only by physical hazards but also by threats to their social resources. The transgression of moral boundaries represents a threat to the social power gained from that social order.

CLUMSINESS BY DESIGN

The normative procedural recommendations emerging out of cultural theory have coalesced into the concept of ‘clumsiness’ in institutional design. This term, borrowed from Shapiro’s concept of clumsy institutions, cautions against making single and final choices between contradictory alternatives. Preserving difference throughout a decision making process is equivalent, on one level at least, to maintaining diversity in an investment portfolios. Cultural theory offers two further enhancements on this metaphor of resilience through diversity. First it explains why contradictory problem frames persist through time: each solidarity or culture reconfigures the problem with itself as the solution. The second refinement, which differs from the disconnected assets in a diverse financial portfolio is that the competing worldviews are locked in endemic conflict and are defined in contradistinction to each other. Each culture needs the other cultures to maintain difference and identity and it is partly for this reason that it is difficult to achieve settlements, let alone consensus. For instance, each of the three active cultures—the individualist, the egalitarian and the hierarchical forms—identifies contrasting causes of and solutions to the climate problem. The diagnosis and cure solve internal problems of social organization, authority and socio-cultural viability. Given the critical role of these beliefs to the viability of each of the organizational forms, it is unlikely that progress can be made on the basis of a reconciliation across competing values. Instead, clumsiness seeks to identify workable compromises.

A recent edited volume captures many of the arguments for and examples of clumsiness in institutional design (Verweij & Thompson, 2006). The volume describes the contribution of the principle of clumsiness in two ways. The first is to identify examples that are striking because of the presence or absence of clumsiness in institutional design. For instance, Intriligator, Wedel, and Lee's (2006) work on the liberalization of the former Soviet Union shows the damage wrought by a monocultural view of the world: rampant individualism in post-Soviet reform fundamentally damaged economic growth in the region, elevated mortality rates and create a fatalistic and skeptical population. Secondly, Verweij and Thompson (2006) suggested that what counts as a preferable form of clumsiness will vary from between culture, just as the meta-concept of justice remains contested across solidarities: "Each of the active ways of organizing lends itself to a particular preference for how clumsy institutions can be arrived at" (p. 21).

These arguments are slightly enigmatic and one is left wondering how clumsiness can be operationalized. The second argument suggests that society is simply competitive field for organizations seeking resources and political influence. While in modern society, some argue that the power of the state has been diminished, it is still the case that the executive and the judiciary are called upon to mediate between conflicting interests and can ultimately impose a solution in law. Clumsiness is an important organizing principle because it suggests that diversity should be sustained and that a process, convened in many, but not all cases, by the state, should seek to identify viable settlements.

Other chapters in the volume provide detailed accounts of experience with or without clumsiness and start to define a procedural framework for its implementation. Intriligator et al. (2006) focus on post-Soviet Russia and argued that, in stark contrast to China, reform failed due to an excess of individualism and a dearth of hierarchy. The storyline reveals, in Hood's (1996) terms, a failure of control systems in the art of the state, on a grand scale. In the case of the USSR, the collapse of communism invited a rapid period of reform as the social infrastructure, industry and state-owned organizations were 'liberalized, stabilized and privatized' in a grand fire sale designed to create a vibrant market out of the remains of an extensive and centralized bureaucracy. The dogmatic form of individualism, made manifest in these reforms, valorized the free market over other cultures and was matched by a degree of myopic decision making on the part of key decision makers that, in some cases, was criminal. It created the conditions for the abuse of positional power throughout the system, the flight of capital from industry and sufficient political risk to deter external investment:

Translated into the language of clumsiness: the reform programs, being singularly based on an extreme individualistic logic, did not promote any of the ways of organizing, perceiving and justifying social relations (except for fatalism). (Intriligator et al., 2006, p. 114)

In contrast, Chinese reform followed the model, established in Taiwan, Japan and South Korea, of reforming from the centre, under the control of bureaucracy through a settlement that sustained the legal and political institutions that are essential to a functioning market. It reduced political risk and created the stable conditions necessary to attract foreign direct investment and the growth of sectors in manufacturing. What is missing from the current configuration in China are the egalitarian cultures, associated with institutions of democracy and with civil society. While the current settlement appears to be robust, cultural theorists would argue, almost on cybernetic grounds, that all three active solidarities must be present. In the USSR, central control was replaced very rapidly by the democratic institutions that came hand in hand with market reforms, but in the face of the failure of liberalization and the significant financial losses suffered by the middle classes in particular, the project as a whole is at risk.

If Hood's work described the range of organizational forms resulting from hybrid forms of execution and control designed to sustain the tension he considers to be vital to develop robust systems of accountability, Intriligator et al. (2006) described the failure that results from extreme lopsidedness in organization design.

Kahan, Braman, and Gastil (2006) told a detailed story of the conflict over gun control in the United States. They illustrate the inherently political and normative character of risk controversies, expressed in proxy conflicts over risk statistics and safety. The reduction of risk controversies to debates over technical evidence was described by Douglas as the “depoliticisation of risk,” over 20 years ago. Kahan et al. argued that the technical framing of moral conflict is a product of liberal norms, which prevent the state from establishing or protecting a strong moral orthodoxy. Instead they argue that:

the prevention of physical harm seems morally ecumenical in this way. That is why most citizens are moved to speak in the empirical, consequentialist idiom of public safety, even though instrumental arguments conceal the normative foundations of their views towards guns. (Kahan et al., 2006, p. 158)

They argue that the gun control conflict cannot be resolved through this strategy of depoliticization; it cannot be resolved by reducing the evidence base to the purely technical. At the heart of the conflict are competing moral visions, with guns cast as rich political symbols, representing, for one side, the embodiment of individualism and domain of man over nature and for the other side the “elevation of force over reason” (p. 158) and the violent defense of inequalities. Both parties assemble statistical evidence to support their case, focusing on the impact on public safety as a proxy for their moral commitments.

Nina Eliasoph (1998), in *Avoiding Politics*, documents the same phenomenon at the individual level through her observations of environmental activists engaged in conflict. Using Goffman’s distinction between backstage and frontstage identity, she illustrates how complex arguments about the acceptability of technologies are condensed into simpler pleas to avoid harm and danger when participants find themselves in the public limelight. The modern secular and rational polity establishes the conditions under which utterances will be treated with felicity and given authority. Discourses of rationality have dominated for so long that openly normative arguments carry less weight.

Jasanoff (2005) made a similar argument about the power of technical risk arguments, using the contrast between the governance of biotechnology in the UK and the US. She argued that because conflict is often settled in an openly adversarial court system in the US, this tends to polarize the debate, which conscripts science as an objective arbitrator or authority. Numbers reign in this highly adversarial setting. The British tradition allows a greater role for expertise and for the judgements of government appointed advisors, leading to more nuanced decision-making.

In the context of gun control, Kahan, Braman, and Gastil (2006) set out a procedural framework that they argue will help to lay bare the normative commitments of the organizations involved in the conflict. Their goal is to repoliticize the process through three principles. The first principle, “social-meaning over-determination” asks the participants to provide a rich account of the meanings that motivate their involvement in the conflict. This deliberate saturation of meaning helps to clarify the values that are defended in the conflict. The second principle, “identity vouching,” provides participants with an opportunity to verify that a compromise is acceptable to other members and particularly to authority figures in their own organization; it is a mechanism that lends credibility to compromise. The third principle, “discourse sequencing,” recognizes that the first two principles create the conditions for more open and accepting dialogue and suggests that the careful crafting of a decision can ensure that all parties walk away believing that the process has been fair and accountable.

The final example of the efficacy of clumsiness as a procedural principle is Lach, Ingram, and Rayner’s (2006) account of institutional innovation in water use management in California. They map out three organizational voices active in a discourse and conflict over the most appropriate solution to the pressing water scarcity facing California. Each of the three separate approaches exemplifies one of the three active quadrants in the typology. The individualist voice emphasizes market solutions through pricing and competition and is resentful of the expensive interventions

by bureaucracies. The hierarchy argues that rational planning and management should prevail in the struggle over competitive interactions; hierarchy preserves the long view of water supply and demand. The egalitarian organizations involved in the conflict draw attention to impacts of human activity on the natural environment and to the inequities generated by the current system of distribution. Each position assembles evidence to reinforce its argument and the science contains enough uncertainty to support a range of approaches. In the face of overarching pressure to resolve problems with the system of water allocation and the thinly veiled threat of external intervention, the three groups carved out a settlement. The procedure for establishing the rate, devised with stakeholder input, embodies three competing principles of equity, at least one of which can be seen to appeal to each of the egalitarian, hierarchical, and competitive ways of organizing to be found among the stakeholders. These are principles of parity, proportionality, and priority (Young, 1993; see also, Rayner, 1995a).

First, each household is allocated the same fixed allowance for human consumption, i.e., for drinking, cooking, bathing, etc. thus meeting the requirement of *parity*, which is in turn characteristic of egalitarians, who view water as a basic need and human right rather than as a commodity.

Each household then receives an additional variable allowance for use outside the house—mainly irrigation of lots. This allowance is determined by a formula that includes the area of each lot (obtained from real estate records), the evapotranspiration rates of typical plantings, and records of seasonal temperatures. Thus the allowance varies by lot size and by month to allow for efficient irrigation of gardens. Charts showing usage alongside allocation have proven effective in correcting householders' tendency to over water their yards late in the growing season. This second allowance satisfies hierarchical preferences for *proportionality* in allocation.

Consumers wishing to consume in excess of these allowances are, in principle, subject to an escalating scale of charges, the rate rising more precipitously as consumption increases, although in practice punitive levels of charging have seldom been reached. However, this does allow for individualist householders to assert their *priority* in allocation, should they choose to do so. Individualists are also attracted by the market-like emphasis on establishing prices and property rights.

Hence, egalitarians see a strong instrument that motivates conservation as well as protects everyone's access to sufficient water for basic needs. Hierarchists appreciate the rationality of the strategy and its ability to help in long term planning. Individualists appreciate how the strategy protects the customer's freedom of choice to use as much water as can be afforded.

It is a clumsy solution for all three cultures that demonstrates that a compromise by all parties is preferable to elegant, monocultural but unviable solution.

Author Perri 6 (2006) provided perhaps another extension to the framework for embedding the typology dynamically within social systems as a range of scales. He argued that coexistence in the face of contradictory certitudes requires settlements: institutionalized conciliation between rival imperatives necessary to achieve viability (p. 307). These settlements can be formally designed, as in the case of peace negotiations, or can emerge over time as processes of "muddling through" are institutionalized. The existence of contradictory certitudes suggests that solidarities, occupying a shared organizational field have the capacity to be in an endemic state of conflict. Ashby's concept of "requisite variety," imported into cultural theory, implies that it is difficult for any one of the solidarities to be excluded; in one version of this argument, each solidarity contains the others in some embryonic form. To put it more practically, members of a solidarity may use strategies, arguments and incentives from other contexts in the course of struggles for control and power internally.

Perri 6 provides an acute and detailed account of the phenomenon of settlement, which plays an obvious role in enabling contradictory certitudes to co-exist. He argues that clumsy institutions represent one form of settlement, built on mutual tolerance and conflict management. The goal is to maintain a balance where no solidarity has veto power. There are three other forms that can be arranged into another matrix:

- Separation—settlement into distinct spheres either structurally or sequentially, which effectively keeps difference apart.
- Exchange or mutual dependence—this relies on some service or resource dependence between solidarities.
- Compromise/hybridity: concession and trade-offs between solidarities.

The language of settlement throws light on our earlier question of how clumsiness can be operationalized by offering a typology of types of arrangements suited to the complex organizational and inter-organizational environment in industrial societies. Combined with the underlying typology of solidarities and the dynamics described above, an ambitious framework emerges. Most applications of this framework are partial, but one can discern a larger scaffolding from each site ranging from the detailed account of the workings of the regulation of risk by the UK government (Hood, Rothstein, & Baldwin, 2001) to the complex international relations of climate change.

CONCLUSION

It would be fair to say that cultural theory has evolved significantly in recent years, both through applications to specific to the field and in the broader literature on the politics of collective action and governance (Rayner, 1992; Thompson et al., 1990; Douglas, 1992; Johnson & Covello, 1987; Rayner & Thompson, 1998a, 1998b).

The most valuable contribution of the neo-Durkheimian approach is to explain why politicised debates over meaning are so central to the field of risk. So called “risk perceptions” that carry the force of social power are neither irrational nor simply psychological in origins. The context within which they are felicitous and hence rational reveals features of social institutions that are normally treated as self evident—risk has a forensic function. Whether they are described as meanings, constructions, symbols or metaphors, classifications are defended because they legitimate the distribution of social power within an institution. Risk becomes politicized not simply because it is a threat to life but because it is a threat to ways of life. Rather than ask how a risk comes to be magnified or how risk perceptions are influenced by heuristics, irrationality or pure emotion, this approach asks indirect questions: At whom is the finger of blame being pointed? Who is being held accountable? What is being rejected and what is being defended in a particular collective social action? This implies that for issues such as genetically modified organisms, research that seeks to demonstrate the safety of the technology will not dissipate political opposition since protest is in defense of a moral boundary.

Much of the recent interest in the concept trust in the risk literature uses a heavily individualist framing, which implies that the key task is to convince citizens that risk management organizations are credible and accountable. As governments withdraw from the direct provision of public goods in many areas, deference declines and social movements become professionalized, endemic mistrust may become the norm rather than a temporary problem to be tackled through wider consultation and engagement. Cultural theory anticipated this trend in the eighties and provides a solid foundation for both diagnoses and cures.

On a fundamental level, the functional form of explanation developed by Douglas offers an explanation for the origins of the emotion of fear and hence an avenue for psychological approaches to explore the origins of heuristics and mental models in social institutions. A number of key texts focus on the relationship between classifications and cognition (Douglas, 1999; Douglas & Hull, 1992). It would be a shame if the contribution of cultural theory to risk management were ignored because of a fundamental misrepresentation of the theory.

Finally, it is worth noting the irony inherent in the transformation of the grid-group typology described in above. A crude metaphor for the cultural approach described above is that of a filter, through which knowledge is interpreted using pre-existing classifications in order to make it understandable and to deal with ambiguity. In the act of trying to make sense of cultural theory, researchers have transformed a richly sociological theory into a theory of personality types, despite

Douglas' persistent criticism of methodological individualism (Douglas & Ney, 1998). One hopes this chapter has done some justice to the wider literature from which the typology is derived.

NOTES

1. For an earlier discussion see Tansey and O'Riordan (1999).
2. Of course there are important exceptions to this generalization. Natural hazards research has addressed piecemeal adaptation and risk avoidance is addressed in economics, e.g., Calabresi, G., *The Cost of Accidents*, Yale University Press, New Haven, 1977.
3. Both markets and collectives espouse equality, but whereas the market institution focuses on equality of opportunity among individuals, the collectivist institution emphasizes strict equality of condition among members (Rayner 1988b).
4. Lupton examined the modern social experience of pregnancy and draws on Douglas' work to make sense of wider social attitudes towards the pregnant body. In individualist societies, the pregnant form is seen as abject and Lupton argued that the hybrid nature of the pregnant woman is risky in purely and dramatically negative terms "She is a monstrous being, because she has entered a liminal state in being a body with another body inside it, and thus disrupts notions of the ideal body being autonomous and singular" (p. 75).

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