Social Science and Salvation: Risk Society as Mythical Discourse[1]

Jeffrey C. Alexander
Philip Smith

Department of Sociology, University of California, Los Angeles, USA
Department of Anthropology and Sociology, University of Queensland, Brisbane, Qld., Australia

Summary: Dominant perspectives on science and technology fail to come to terms with the continuing role of culture and mythology in mediating perceptions and moral evaluations of technology and its impacts. The need for such an understanding is demonstrated in a critique of Ulrich Beck's important „Risk Society" thesis. Failure to acknowledge a mediating cultural variable influencing the time-lag in risk perception leads Beck to theorizing which deconstructs on close inspection. A similar flaw leaves the contending theory of Mary Douglas and Aaron Wildavsky unable to explain the social distribution of risk consciousness except through recourse to residual and ad hoc explanations. As a solution to these problems the paper proposes a late-Durkheimian theory of discourses on technology and risk. This argues that technology is coded as sacred or profane and is narrated as bringing salvation or damnation. This theory is then applied in a re-reading of Beck's Risk Society as an environmentalist manifesto replete with apocalyptic imagery.

Can there be a truly rational discourse on scientific technology and risk? Research in the sociology of science suggests not. Ethnographic work tells us that scientific studies are indexical and driven by rule-of-thumb routine practices (Latour and Woolgar 1979, Garfinkel et al 1981). Studies of scientific writing point to the presence of rhetoric and imagery in the scientific research paper (Gusfield 1976). The strong program in the history of science suggests that scientific knowledge is a tribal artifact that can be studied through the same relativising prism as the Azande oracle (Bloor 1976). Such discussions of circularity and self-referentiality in science have replaced the image of the rational truth-finding engine. What is true for scientific work, moreover, is also true for scientific organization. The recent work of Knorr-Cetina (1994), for example, suggests that „operative fictions" provide the normative foundations for scientific collaboration and research activity within particular institutional settings.

It would seem, then, that the social sciences know a good deal about the impact of subjective and cultural factors upon natural scientific action and ideas. In comparison, we know relatively little about the role that culture and agency play in structuring social scientific and popular discourses about science and technology. Exploring this neglected area is vital, for it is human beings acting in

reference to cultural structures who mark out appropriate and inappropriate technologies, legitimate and illegitimate uses of science, and the risks involved in the experimentation and application of technology to society. Symbolic action also defines the possibilities for challenging dominant uses of technology in turn.

In this paper we will demonstrate the need for a more cultural understanding of discourses on technology and its implications, primarily through an evaluation of existing theories about environmental and social risks. A critique of Ulrich Beck's Risk Society (Beck 1992a) provides the major foil for our inquiry. Our thesis is supported by a secondary line of argument which gives consideration to Mary Douglas and Aaron Wildavsky's (1982) equally influential thesis on Risk and Culture. We demonstrate that because neither work gives any real autonomy to culture, both run into intractable problems. In Beck's case the fundamental problem is the timing of risk awareness, in Douglas and Wildavsky's its social distribution. Attempts to resolve these problems lead both theories of risk society into self-contradictory and ad hoc theorising. In contradistinction to these theses we sketch out the contours of a late-Durkheimian position drawing upon an earlier empirical investigation of discourse about the computer between 1945 and 1975 (Alexander 1993) and a study of Durkheimian themes in discourses about natural hazards, environmental risks and their social consequences (West and Smith 1996a, 1996b). We suggest that a model which acknowledges the autonomy of culture and the role of the mythological, the sacred and the profane in technological discourses enables a more

---

satisfactory understanding of the social dynamics of risk consciousness and, indeed. Beck's *Risk Society* text itself.

1. Permanent Reduction: Technology in Social Theory

While recognizing that modernity may allow some residual belief systems to remain in place, students of contemporary society have argued that technology is by its very nature a rationalizing, instrumental, and corrosive force.[2] In a pair of essays written thirty years ago, Jürgen Habermas articulated this standard position with particular force. Treating technology as the „scientifically rationalized control of objectified processes," Habermas (1968a, p. 57) constrasts it sharply with phenomena related to „the practical question of how men can and want to live." Indeed, with the increasing centrality of technology, the meaningful organization of the world has been displaced by purposive-rational organization. „To the extend that technology and science permeate social institutions and thus transform them," Habermas (1968b, p. 81) insists, „old legitimations are destroyed." These earlier legitimations were based on tradition, „the older

---

[2] „When we talk about cultural imagination, we raise an issue about the key process of modernity and of modern institutions. The most prominent theoretical perspectives have linked these processes not to a gain of meaning but a *loss of meaning*, they have seen them as major trasnformative trends toward greater commodification, rationalization, technicization. [But] the fact that some regions of the world have experienced a loss of religious fervour does not signify that there exist no other mythologies to take the place of religion ... The thesis of the disenchantment of the world fails ... It rests on the equation of the content of particular belief systems or modes of operation – which have changed – with „substance," „meaning," the „life-world," etc. in general. If the proposition of the „loss of meaning" in modern and postmodern life is stripped of this equation, it amounts to a historically plausible but trivial assertion about the changing nature of meaning structures." (Knorr-Cetina 1994, pp. 6–7, original italics.)

As an antidote to this failure, Knorr-Cetina urges social scientists to study the role that „modes of fiction" play in contemporary institutional life, describing them as „ways of enchantment of the world" (ibid, p. 5). While her argument points directly to the approach we take up here, it is limited by her insistence that micro-analysis of local practices is the only plausible entrée for studying how and where such enchanting fictions work. In this way, she separates herself from the traditions of inquiry that focus on how codes and narratives operate in a macro-sociological way.

mythic, religious, and metaphysical worldviews" that addressed ...the central questions of men's collective existence [such as] justice and freedom, violence and oppression, happiness and gratification ... love and hate, salvation and damnation" (ibid., p.96). After technology has done its work, however, such questions no longer can be asked: „The culturally defined self-understanding of a social life-world is replaced by the self-reification of men under categories of purposive-rational action and adaptive behavior" (ibid., pp. 105–106). There has ensued a „horizontal extension of subsystems of purposive-rational action," such that „traditional structures are increasingly subordinated to conditions of instrumental or strategic rationality" (ibid., p. 98). In this situation, it is only natural that the ideology of technology has replaced previous traditional legitimations. Because it is so stubbornly rationalistic, this new ideology (ibid., p. 111) does not exhibit „the opaque force of a delusion" or a „wish-fulfilling fantasy"; nor is it „based in the same way on the causality of dissociated symbols and unconscious motives." Technological ideology has abandoned any attempt to „express a projection of the 'good life'."

In developing this position Habermas had, of course, been influenced by his life-long engagement with Marx and Weber. Although his critique was primarily directed at the workings of capitalism, Marx's own writings also discussed the debilitating and alienating effects of new industrial technology. In Marx's vision the mechanisation of production within the factory had stripped meaning from the production process and made the worker into an „appendage of the machine". For Marx technology could be understood in objective terms as the „material forces of production" which could be radically separated from human consciousness. This line of critique continued in a modified form in the tradition of critical theory that Habermas inherited. For example, in the *Dialectic of Enlightenment* and in their critique of the „culture industries", Habermas's teachers Horkheimer and Adorno attacked both science and techno-cultural systems as deeply corrosive of authentic systems of meaning, pointing to the unmediated effects of the „post-auratic" technological artefacts produced through systems of mass production.

Later in this paper we will suggest that in order to understand the discourses and uses of modern technological systems one must, of course, begin by recalling Weber's ironic discovery that those who created modern industrial society did so in order to pursue salvation. In the course of his com-

parative sociology of religion. Weber had demonstrated that the concern for salvation was central to the cultural and social organization of traditional societies. The great religions promised human beings an escape from toil and suffering and a release from earthly constraints, if only they conceived the world in certain terms and strove to act in certain ways. Yet, while Weber understood that such intense supramundane concerns continued well into the early capitalist era, he insisted that such orientations could permeate and organize wordly experience only so long as scientific understanding had not undermined the validity of a divinely ordered telos. After the maturity of industrial capitalism, Weber insisted (we think wrongly), instrumental, not value-rationality would prevail. This historicizing contention lay at the basis of Weber's entire approach to the rationalization of modern society, leading precisely to the kind of anti-normative understanding of technology and ideology that we have described in Habermas's work.

But Weber's influence on thinking about technology and society does not stop at the gates of critical theory. Having been carried over the Atlantic by Parsons and others, Weber's writings exerted a decisive and remarkably similar impact on functionalist thought, which also understoood the effects of technology in material and rational terms. Robert Merton's (1970) work on science argued that although Puritanism had inspired early scientific inventions, their deployment depended largely upon their objective ability to solve technical and economic problems rather than symbolic needs. In his book on the industrial revolution Neil Smelser (1959) follows much the same line of thinking. Here it is Methodist values that underpin innovation, but only as generalized values. Concrete innovation is determined by economic demand and the effects of technology by its material capabilities. American critical theory is little different. Robert Blauner's (1964) studies of work drew attention primarily to the ways that the organization of production (craftwork, mass production, full-automation etc.) generated alienation. But in Blauner's model it is technology that underpins shifts between production regimes, and hence subjective experiences of alienation. Similarly Alvin Gouldner's (1979) new class theory roots the rationalist and technological wordview of the new class (scientists, engineers, planners etc.) in the technical nature of their work. This in turn depends upon systems of higher eductation, which exist, in the last analysis thanks to the existence of technologically advanced production. Daniel Bell's (1973)

analysis of the "cultural contradictions of capitalism" also drew attention to the linkages between a cuture of rationality and the needs of technologically driven forms of production in the age of science.

The list could go on, but we believe our point has been made. In sociological theory technology has been overwhelmingly understood to produce rational discourses which respond in a more or less unmediated way to the objective materiality of technology and its effects. These various suppositions about the deracinated and demystifying properties of technology are false. We suggest that a failure to recognise the role of culture in mediating the impact of technology on society and social discourse about technology and its effects can produce disastrous results for theorising. In the next section of this paper we will demonstrate this claim by examining the most powerful recent version of the classical position on technology and society, Ulrich Beck's *Risk Society*. We begin by showing that Beck's objectivist position leads to refractory problems in explaining the rise of contemporary risk consciousness.

2. Beck I: The Rational-Scientific Account of the Risk Society: Material Force and Objective Perception

In his *Risk Society*, Ulrich Beck (1992a [1986]) appears to present a sober and sobering argument about the more general, extra-economic effects of recent technological change. Modern scientific knowledge, and closely associated industrial production, have outgrown our efforts at prediction and control. The risks associated with harmful side-effects like toxic waste, radioactive materials, acid rain and ozone depletion are now less reversible and more global than the risks of earlier capitalist life. Indeed, to a degree unknown in traditional industrial production, social life in advanced capitalist society is increasingly organized around the goal of controlling the distribution and consequences of these pollutants and their associated risks rather than around the production and consumption of goods themselves. Because contemporary industrial production is forced to continually scrutinize its own „rationally constructed" rather than „natural" foundations, we are living in a new stage of *reflexive* modernization that demands the heightened exercise of rational discourse and humanitarian control. At the present time, however, private property and profit contin-

ue to control economic decision-making in industrial society. For this reason, the „risk society" in its nascent stage actually threatens the authority of scientific rationality and the faith in human progress upon which the exercise of such rationality depends. While expert systems proliferate in an effort to evaluate environmental risks, the dearth of scientific data makes firm predictions impossible, and, even if such data were forthcoming, the lack of political-economic democracy makes „acceptable" levels of risk impossible to decide. In response to these failures, political activity is beginning to expand its scope beyond class, party politics, and charismatic leaders, embracing global issues that affect every level of society and demanding the expansion of democratic control beyond the polity into the worlds of industrial production and scientific expertise.

In this strain of his argument, then, Beck presents the terrors of the risk society as an objective social fact, one that has resulted from intra-systemic, involuntary, tendendial developments in the economic infrastructure of capitalist societies. They emerge „from techno-economic development itself" (1992a, p. 19), unmediated by broader cultural frames. The questions of when, and how, a „risk" is detected, and of how these risks are placed on the social agenda, are not raised. It is simply the sheer objective enormity of risk that creates its apperception. Beck makes statements like the following.

„In Germany, the consumption of artificial fertiliser grew from 143 to 378 kilograms per hectare over the period 1951–1983, and the use of agricultural chemicals rose from 25,000 to 35,000 tons. [Thus,] a disproportionately small increase of yields relative to the use of fertiliser and chemicals contrasts with a disproportionately large increase in the natural destruction that is visible and painful to the farmer" (Ibid., p. 37).[3]

But why should the farmer notice the „natural destruction" at all? Because it is destructive to nature, and thus unnatural? Pure and simple visibility, and the logical inductions produced by such perception, are critical for this line of Beck's argument. He writes at one point that „damage to and destruction of nature no longer occur outside our personal experience in the sphere of chemical, physical and biological chains of effects; instead they strike more and more clearly our eyes, ears, and noses" (ibid., p. 55). Yet, even if the farmer's senses do record such destruction, why should it be

experienced b/ ... as „painful"? The same kind of approach is revealed in the following statement.

„The poverty of the Third World is joined by horror at the unleashed destructive powers of the developed risk industry. The pictures and reports from Bhopal and Latin America speak a language of their own." (Ibid., p. 43).

What language? Who „joins" the horror? Why do people care? These complex issues of interpretation and meaning are swept under the carpet by the objectivist fallacy.

3. Beck II: Time-Lag and Residual Categories

While Beck's determination to proceed in an entirely objectivist fashion is clear, there are nagging empirical difficulties that force him to confront the perceptual issue in a less simplistic if not less simplifying way. These center on the question, „why now rather than before?" After all, the objective risks from techno-industrial production did not burst on the scene with the emergence of green politics. During the first part of this century, for example, smog conditions were common in coal-burning cities. What Londoners called „pea-souper" conditions were responsible for thousands of respiratory system related deaths. Beck is implicitly aware of this time-lag between objective risk and the perception of risk. One can find in his discussion three different empirical explanations for this lag. In each case, however, both the causes postulated and the solutions offered circle back to the kind of simplifying and reductionist understanding of perception we have described above.

(1) „The distribution of socially produced wealth and related conflicts occupy the foreground so long as obvious material need, the 'dictatorship of scarcity', rules the thought and action of people" (ibid., p. 20). In the earlier phase of industrial society, poverty was so great that people were preoccupied with wealth creation rather than the ecological consequences of its production. Only after minimal levels of wealth have been attained has it been possible for attention to be focussed on risks.

This explanation of time-lag rests on the unexplored assumption that material comfort „naturally" and „automatically" takes precedence over biological health and environmental comfort. Is this an objective human preference structure unmediated by broader cultural perceptions? And how much comfort is enough? This explanation as-

[3] Unless otherwise noted, all page references to Beck's work refer to Beck 1992a.

(2) „Hazards in those days assaulted the nose or the eyes and were thus perceptible to the senses, while the risks of civilization today typically escape perception and are localized in the sphere of physical and chemical formulas (e.g., toxins in food stuffs or the nuclear threat)" (ibid., p. 21). Here Beck confronts the time-lag in a different way, seeking to explain why, even now, the enormity of the risks he has postulated often do not register as strongly as he thinks they should in the perceptions of contemporary populations.

One obvious problem with this second explanation is that it completely contradicts the objectivist rationale behind central thesis of risk consciousness we discussed under Beck I. This new thesis suggests that in the earlier period risks were, in fact, more material and visible, and were perceptually registered for that very reason. Even more telling from a theoretical point of view is a different kind of problem this second explanation raises. In response to the invisibility problem, Beck argues for an „opening up of the political" (ibid., pp. 183–236), for a popular political movement that would pressure the mass media to focus more attention on environmental risks. Yet this argument merely puts the reflection approach to risk perception into a different empirical context. The result of increased media focus, as Beck sees it, would be the increase in objective information, and he appears confident that this information will automatically register on contemporary consciousness. This confidence is stated in a particularly clear way in an article Beck published when the English translation of *Risk Society* appeared: „The images in the news of skeletal trees or of dying seals have opened people's eyes. Making the threats publicly visible and arousing attention in detail, in one's own living space – these are the cultural eyes through which the 'blind *citoyens*' can perhaps win back the autonomy of their own judgment" (1992b, pp. 119–120). Why Beck employs the word „cultural" to describe such perceptions is difficult to see. They are no more than rational inductions from available information, reinforcing his objectivist, reflection theory of perception and his reluctance to explore the non-rational dimensions of meaning and motivation.

(3) „Risks ... induce systematic and often irreversible harm, generally remain invisible, are based on causal interpretations, and thus initially only exist in terms of the ... knowledge about them (1992a, pp. 22–23) ... [Because] statements on hazards are never reducible to mere statements of fact[,] a causal interpretation must be added (ibid., p. 27) ... Presumptions of causality escape our perception [and] in this sense risks are invisible. The implied causality always remains more or less uncertain and tentative" (ibid., p. 28).

This third explanation for the time-lag between contemporary risk and its perception would appear to introduce a gaping hole in Beck's rationality theory. Not only are there the supposedly less visible qualitative risks produced by contemporary industrial society; not only is there insufficient information at this point to make natural and correct inductions about the risks at hand; but Beck now suggests that, even if this information were available, rational inductions would not be possible unless an interpretive and overarching theory were provided first. As it stands, this argument is certainly correct. The knowledge of facts does not automatically produce their explanation: they do not a theory make. There is a major problem, however, in the solution Beck proposes. For he argues that the missing causal interpretation of objective facts, visible and invisible, can only be provided by scientific knowledge itself. Beck adds a telling sentence to the paragraph we quoted above: „The implied causality always remains more or less uncertain and tentative. Thus we are dealing with a theoretical and *hence scientized consciousness*, even in the everyday consciousness of risks" (ibid., p. 28, italics added). It is not shifting cultural expectations, fears, or hopes that intervene between contemporary risks and their perception, but a more accurate, more demanding, less „traditionalized" (ibid., p. 153), and less economically constrained form of rational scientific knowledge itself. Deformed scientific judgments allow risks to remain invisible; free and true science makes objective risks visible for all. „Public criticisms and disquiet," Beck insists (ibid., p. 30), „derive essentially from the dialectic of expertise and counter-expertise." He concludes that, „without scientific arguments and scientific critique of scientific arguments they [i.e., critiques of industrial risk society] remain dull; indeed, they cannot even perceive the mainly 'invisible' object of their critique and fears." Once again, Beck's efforts to address the time lag have circled back to the objectivity of risk and the rationality of its perception.

Beck wants to portray the risk society as an objective fact, both ontologically, in the sense that it exists as such, in a cold, hard, and material way, and epistemologically, in the sense that these objective

facts are perceived directly and accurately in the minds of citizens themselves. While his empirical recognition of the time-lag in popular consciousness about risk forces him to confront the difficulties of this position, he is unable to develop a satisfactory alternative explanation, introducing instead a series of *ad hoc* residual categories that fill the empirical gap in theoretically contradictory ways. In order to address the time-lag problem in a more theoretically coherent way, Beck would have had to include the cultural variable much more explicitly into his explanatory scheme. Ontologically, he would have to acknowledge that the very production of a risk society rests upon a massive, if largely tacit cultural commitment to solving the problems of the world through the introduction of rationalizing, science-based technology. Epistemologically, he would have to recognize that the perception of this technological society as highly risky itself involves a fundamental shift in the social referents of this overarching cultural scheme.

4. Douglas and Wildavsky – A Failed Attempt at Cultural Analysis

The position of Mary Douglas and Aaron Wildavsky (1982) represents the only systematic alternative explanation to Beck's of the rise of environmental risk consciousness. Do they fare any better? Failure to acknowledge the role of cultural factors in risk perception makes Beck a prisoner of objectivism. Douglas and Wildavsky make a different error, in their case acknowledging the role of culture, but in a reductionistic way that cannot satisfactorily explain the autonomy of cultural myths and their distribution through a social structure. For this reason we see a critique of *Cultural Bias* as an important stepping-stone towards the clarification of a properly cultural, late-Durkheimian theory of environmental risk discourses, such as that which we outline later in this paper.

Douglas and Wildavsky argue that environmentalist discourses are articulated around themes of purity and pollution and that these reflect forms of „cultural bias" associated with a sectarian organization located on the boundaries of society. One merit of this perspective is that it shifts the focus of analysis more squarely in the direction of the moral dynamics of risk *perception* (1982, p.7ff). To our reading this contrasts favourably with Beck's objectivist account of risk, where the key issue is one of struggle over scientific and technical *evaluation*. In particular it allows Douglas and Wildavsky to

propose a culturalist thesis which is more sensitive to the symbolic contours of environmentalist discourses than the technological determinism of Beck. However, from a late-Durkheimian perspective the Douglas and Wildavsky thesis is insufficiently cultural, insufficiently attentive to the autonomy of mythical and symbolic themes in environmentalist discourse.

The argument proposed in *Risk and Culture* is based upon Mary Douglas's grid/group model of social structure. In developing this model Douglas was influenced by the middle period of Durkheim's work: the Durkheim of *Suicide* and *The Division of Labor*. In this phase of his work Durkheim read off moral densities and solidaristic sentiments from the patterns of interaction and institutions of the social structure. In his later work Durkheim was to reject this form of analysis as too deterministic and developed the more voluntaristic cultural model proposed in *The Elementary Forms of Religious Life* (Alexander 1982). In acknowledging the role of agency, Durkheim's later position provides the basis for a morally centred social theory of environmentalism. But in addition we contend that there are theoretical and empirical reasons to move from the middle-Durkheim to the late-Durkheim in theorizing environmental concern in risk society.

Douglas and Wildavsky assert that it is the sect organization of environmental groups that constructs a form of cultural bias or cosmology that is against hierarchy, complexity and modernity. Such a cultural bias, they argue, can be seen in environmentalist discourses and beliefs. Although (arguably) plausible as an explanation of the beliefs of core inner-sect members, the Douglas/Wildavsky thesis runs into trouble in explaining mass support for environmental causes. Douglas and Wildavsky are compelled to acknowledge that environmentalism is a social movement with a mass following and admit that most members of environmental groups. (what they call the „mail order membership" (1982, p. 173)) are not intensively involved in the everyday operations of the sect. Rather the majority are middle class, suburban citizens who subscribe to organizations like Greenpeace, the Sierra Club and the Audubon Society even though they inhabit a differing grid/group location from core sect members.

At this point their thesis begins to look shaky. How can they explain the prevalence of an environmentalist risk consciousness amongst people involved in routinized mainstream social life who lack the

intense social ties of sect life – people who do not inhabit a sectarian grid- group location? They answer this question in two ways, both of them contradicting their major thesis. Firstly they argue that the environmental movement is driven by „sectarian political entrepreneurs" who define agendas and mobilise a largely passive „mail-order membership" (ibid., p. 165ff.). So although sect theory explains the actions of the hard-core activists who run the organizations, something akin to mass society theory is used to explain this anomalous mass support. Secondly, the support of the membership for the environmentalist cause is further explained with reference to rational choice theory (ibid., pp. 169–171), a theoretical perspective which is radically at odds with their earlier cultural point of view.

„What does the ordinary mail-order member get from these public interest groups that keep asking for contributions? .. A convincing answer is provided by Robert C. Mitchell who argues: 'that these [member] contributions are compatible with behaviour of a egoistic, rational, utility-maximizing kind because the cost is low, the potential cost of not contributing is high and the individual has imperfect information about the effectiveness of his or her contribution in obtaining the good or preventing the bad.' The main distinction Mitchell makes is between public goods and public „bads", that is, bad things imposed on everyone whether they like it or not. Like what? Like the evils listed by environmental interest groups in their direct mail, fund-raising efforts ... Under. .. threatening circumstances, from which there is no escape, a few dollars a year for survival may not appear to be too high a price to pay." (Ibid., pp. 169–170)

So Douglas and Wildavsky make use of *three* different theories to explain the rise of risk society. Their own grid/group theory explains only the beliefs of a handful of extremists. An elite theory, reminiscent of the mass society hypothesis which paints citizens as suggestible, is used to explain mass support. This theory is supplemented (and perhaps contradicted) by a rational choice theory which sees active and autonomous individuals calculating the costs and benefits of membership in the environmental movement. But in addition to these awkwardly juxtaposed theoretical vessels there are shards of unconnected facts. Seemingly taking inspiration from Weber's historical inquiries, Douglas and Wildavsky point to the role of chance events and historical contingencies in explaining the rise of American environmentalism: the postal system, the tradition of lobby politics, the fall out of Vietnam and Watergate and so on. The result is a text which cannot deliver on its initial promise of providing a succinct general theory

of environmentalism. Just as Beck's thesis aligns risk perceptions and discourses too closely to objective dangers. the thesis of Douglas and Wildavsky aligns risks too closely with social structures. In both cases a series of uncomfortable secondary elaborations are required to salvage the initial theory. The solution to this dilemma, we suggest, lies in working out a more cultural model – one that recognises the autonomy of mythical forms of discourse in the way that Durkheim advocated in his later work. Only with such a model can we explain the slippages between fact and interpretation, risks and their social perception as well as the precise style and content of environmentalist imagery. While this is not the place to illustrate such a thesis in any detail, in the next section of this paper we outline what such a theory might look like.

5. Technological Eschatology: Culturalizing the Production and Perception of Risk

As we have argued elsewhere (e.g., Alexander, Smith, and Sherwood 1993), the debilitating effects of a historicist dichotomization of traditional and modern (technological) society can be corrected by incorporating. the more structural understanding of Durkheim's later work. In his „religious sociology," Durkheim explored the manner in which human beings continue to divide the world into sacred and profane, maintaining that even modern men and women need ritual experiences of a mystical kind. Whereas the sacred provides a social representation of the good in relation to which actors seek to build communities, the profane defines an image of evil and establishes a zone of pollution from which humans strive to be saved. In terms of Weber's account of theodicy, then, secular salvation „religions" can be understood as providing escape from earthly suffering by simultaneously offering a millenial promise of utopia and by defining a social evil from which the more utopian vision allows them escape. Human beings have always lived in a risky and uncertain world. Before the industrial revolution, the greatest threat to security was biological – untimely death. It was the search for the metaphysical meaning of death which, along with the problem of injustice, spurred the religious imagination in its traditional forms. With the rise of scientific, technological, and industrial societies, the terrifying threat of premature death by disease has largely been neutralized. but the human experience of anxiety and risk

has not been mitigated. In a world of continuous, often revolutionary social transformations, devastating wars, and ecological horrors, there remains ample motivation to continue to assuage and explain suffering through the construction of symbolic, highly charged, and cognitively simplified myths, even when such „religious" ideologies are constructed in decidedly post-metaphysical ways.

Expectations for salvation have been inseparable from the technological innovations of industrial capitalism. Major inventions like the steam engine, railroad, telegraph, and telephone (Pool 1983), and the computer as well (Alexander 1993), were hailed by elites and masses as vehicles for secular transcendance. Their spead and power, it was widely proclaimed, would undermine the earthly constraints of time, space, and scarcity. In their early halcyon days, these technologies became vessels both for experiencing an ecastatic release from earthly constraints (this-worldly mysticism, in Weber's terms) and for bringing the glories of heaven down to earth (this-worldly asceticism). In technological discourse, however, the machine has been seen not only as the medium of God but of the Devil. In the early nineteenth century, Luddites lashed out at spinning machines as if they were the idols that the Hebrew fathers had condemned. William Blake decried „dark Satanic mills." When Mary Shelley wrote *Frankenstein, or, the Modern Promotheus*, about the terrifying results of a scientist's efforts to build the world's most „gigantic machine," she initiated a technological version of the Gothic genre that has continued to provide the fundamental narrative framework for the dark side of technology to this day. Victor Frankenstein created a technological monstrosity in the vain hope that it would do good. The monster acts in ways he could not predict. It becomes dangerous and impossible to control, and must eventually be destroyed. This mythical discourse about technological salvation and apocalypse saturates popular culture in the Western world. Hollywood's wildly popular „action films," for example, mix technology with medieval Gothic themes, pit evil against good, and promise salvation from space, from time, and even from mortality itself. When they articulate the utopian vision, these films portray technology as the fantastic vehicle for humanizing the world. In *Star Trek, Batman,* and *Superman,* for example, extraordinary technologies are „under control" and remain servants of a human master. Other films embrace the dystopic vision of technology as dark and polluted, as in the post-nuclear war scenarios of *Mad Max* and *Terminator* or the malevolent scientist movies like *Jurassic Park* and *The Net.*

The extraordinary commitment that generated the motivational energy to create technology-based industrialization depended on more than the legal, economic, and political structures of capitalism and the objective knowledge about nature that rational scientific knowledge could provide. It was fuelled as well by a deep and widely shared belief that technology would bring salvation from the strains and sufferings of modernizing society itself. In terms both of cultural logic and social action, this salvationary discourse about technology was linked to an understanding of nature as profane and threatening, as a force that demanded the „civilizing" control of technology itself. This representation of nature was itself rooted in a Christian tradition that saw „man" as having dominion over the flora and fauna of the natural world. Nonetheless, from its very beginnings industrial society was confronted by an inversionary discourse, one that polluted technology as a threatening apocalypse. This anti-salvation strand of technological discourse – which emerged on both the political left and right – was deeply connected, in turn, with an increasingly elaborate romantic ideology that defined nature as pacific and innocent, indeed as the last best hope for the survival of civilization itself.

In the history of industrial society this antipodal strand of technological discourse, while subordinate to the salvationary strand, was not without significant social effect. Wiener (1981) has demonstrated, for example, that in England the „cult of the countryside" powerfully inhibited early enthusiasm for industrialism, and may eventually have contributed to the decline of Britain's economic might. In Germany, as Mosse (1964) has shown, romantically inspired *Volk* ideologies fuelled the powerful antagonisms to modernity that facilitated the emergence of Nazism as a revolutionary alternative to the supposed emptiness of capitalist modernity. In France (Tucker forthcoming), this counter discourse informed the syndicalist movement that presented such a massively popular alternative to industrial society – both in its capitalist and socialist forms – between 1880 and 1920. In the United States, the „myth of virgin land" (Smith 1950) provided the motivational energy for westward expansion and empire in the nineteenth century, and in the twentieth it inspired the social movement that fought to preserve vast areas of nature in national parks. Richard Grove (1995) has argued that contemporary environmental con-

enced the assessment of human impacts upon nature since the 15th century, and continues to do so today.

But for the past several centuries the strand of discourse that Grove and others have identified has been subordinated. It has only been in the late twentieth century that the balance between the social referents of the sacred and profane elements of technological discourse has begun to change in contemporary liberal democracies. The devastating effects of fifty years of techno-war has etched itself deeply upon contemporary consciousness (Fussell 1975, Gibson 1986), linking technology with horror-filled representations of inhuman savagery in the collective memory of humankind. In the postwar period these images transformed the atomic bomb from an initially positive image (in America at least) into a seething symbol of the dangers of science-based technology itself. As the industrial science which produced „the bomb" made its bid to provide the energy basis for contemporary domestic life, an analogical relationship was constructed between the risks of runaway military technology and the technical basis of civilian industrial life. When scientists themselves began to discover the devastating genetic effects of DDT in the early 1960s (Eyerman and Jamison 1994), this linkage crystallized into a full blown counter-ideology that began to have massive effects on popular consciousness and the social structures of capitalist life.

In this emergent symbolic world of „ecology," nature is portrayed as a holistic, self-regulating, and fundamentally peaceful system in relation to which violence can emerge only from the outside. For those who believe in this nature myth, it is axiomatic that human life can be continued in a viable way only if the economic system is subordinated to – „in tune with" – the ecological one. In this newly dominant environmental consciousness, nature is associated with the sacred and the sublime. The ecotourist is a pilgrim seeking to learn from nature, much like the young Wordsworth of the *Prelude*. The creatures of the natural environment are recoded as superiors to the creatures in the social one. Television and media stories recount the extraordinary aesthetic, communicative, social, and even spiritual qualities of dolphins, gorillas, and whales. For the more enthusaistic advocates of chaos theory and the „new physics," the universe and the atom itself have become spiritualized.

6. Beck III: Reading „Risk Society" as a Mythological Discourse

Drawing upon the cutural theory outlined here, we suggest that *Risk Society* is itself a „social fact" not in the empiricist but in the classical Durkheimian sense. It has emerged as a persuasive representation of contemporary life because of the symbolic *volte-face* we have described. We suggest that its factual assertions are less empirical statements than translations of technological myth into social scientific forms. It is a myth constructed by, and reflecting, the social and cultural structures of contemporary society itself. „Capitalist society" occupied a similar mythical and constructed status in an earlier period, resting indeed on dichotomous categories of the sacred and profane and an escatalogical narrative of salvation and damnation that in striking ways parallel those that nourish „risk society" itself. In *The Communist Manifesto*, Marx employed the same kind of theoretical structure as Beck does 150 years later. He described „capitalist society" as an objective and coercive social fact generated by autonomous forces largely outside of human control. He explained the workers' growing anti-capitalist sensibility as a rational reflection of these conditions. What is clear in retrospect, however, is that *The Manifesto* constructed the mythical discourses of „capitalism" and „communism" as much as it employed rational scientific knowledge to describe them. Beck's *Risk Society* must be understood in the same way. As a manifesto for radical environmentalism, it is saturated with the non-empirical postulates of the discourse of technology. Rather than offering rational inductions from empirical evidence, *Risk Society* translates the rich and suggestive mythology of technological discourse into the empirical categories of social science. It is this prophetic, *Nostradamuslich* quality that probably accounts for the extraordinary popularity of *Risk Society*. By contrast *Risk and Culture,* is couched in a more sober, less apocalyptic idiom, and has attracted little interest outside of academic circles.

While Beck offers various empirical reasons for the „invisibility" of the catastrophic risks threatening contemporary society, his insistance can also be read as attributing to „risk" a fundamentally religious status. As with other forces associated with the supernatural world, „risk" is mysterious and hidden, essentially unknowable and unreachable by human powers: „Many of the newer risks (nuclear or chemical contaminations, pollutants in foodstuffs, diseases of civiliation) completely es-

cape human powers of direct perception" (1992.. p. 27). Risk is there and not there. a hidden. intangible but nonetheless omnipresent force that permeates and shapes the world. The „intractability of modernization risks." Beck suggests (ibid.. p. 40). „is matched by the way they spread."

„They can be in anything and everything. and along with the absolute necessities of life – air to breathe. food. clothing. home furnishings – they pass through all the otherwise strictly controlled protective areas of modernity. (Ibid.)[4]

Confronting the omniscience and omnipresence of divinity, the believer is dumbstruck. mute. The ancient Israelis called their divinity Yawhe, the God who could not be named. In describing the extraordinary risk contemporaries face. Beck describes its mysterious power in much the same way.

„A large group of the population faces devastation and destruction today, for which language and the powers of our imagination fail us. for which we lack any moral or medical category. We are concerned with the absolute and unlimited NOT, which threatens us here. the *un- in general*. unimaginable. unthinkable. un-. un-. un-." (Ibid.. p. 52. original italics)

The extraordinary dangers of the risk society are less empirical generalizations than symbolic representations of the mysterious powers of evil, whose referents Beck connects to the objects of contemporary social and physical life. The Devil hides his face, the folk adage suggests, so that he can better accomplish his awful work.

---

[4] It is useful to contrast Beck's description of the symbolic threats of environmental toxins with the following quotation from the *Summis desiderantes* – a papal bull of 1484 explaining the nature of witchcraft.

„It has come to our ears ... that ... many persons of both sexes unmindful of their own salvation and straying from the Catholic Faith, have abandoned themselves to devils. incubi and succubi, and by their incantations. spells. conjurations. and other accursed charms and crafts. enormities and horrid offences, have slain infants yet in the mother's womb, as also the offspring of cattle, have blasted the produce of the earth. the grapes of the vine, the fruits of the trees, nay. men and women. beasts of burthen. herd-beasts, as well as animals of other kinds, vineyards, orchards. meadows. pastureland, corn. wheat, and all other cereals: these wretches furthermore afflict and torment men and women. beasts of burthen, herd-beast, as well as animals of other kinds, with terrible piteous pains and sore diseases, both internal and external ... whereby they outrage the Divine majesty and are a cause of scandal and danger to very many." (Pope Innocent VIII. quoted in Ben-Yehuda 1985)

Beck's discourse. we argue. translates the cosmology of Satanism – a cosmology of mysterious all-embracing threats – into a modern and only superficially secular form (see also Douglas and Wildavsky 1982. pp. 10–11).

„Threats from civilization are bringing about a kind new „shadow kingdom." comparable to the realm of the gods and demons in antiquity. which is hidden behind the visble world and threatens human life on this Earth ... Everywhere. pollutants and toxins laugh and play their tricks like devils in the Middle Ages. People are almost inescapably bound over to them. Breathing. eating. swelling. wearing clothes – everything has been penetrated by them." (Ibid.. pp. 72–73)

Is it any wonder that Beck concludes that before these „more and more destructive forces ... the human imagination stands in awe" (Ibid.. p. 20).

It was a central tenet of the great monotheistic religions that the hidden but all powerful divinity would make its present felt at a future historical moment. at which time it would end human history by radically and permanently transforming the world. In the presence of this millenial promise of the final judgment, religious virtuosi felt themselves always to be living in an ominous period of transition. a time that was pregnant with the world to come. Hegel translated this religious promise into his notion of „world-historical" figures possessing the singular power to transform their worlds. In translating Hegel's idea. Marx described impersonal forces and their class carriers who were destined to lead society from one stage of its history to another. often by employing violent and world-transforming force. Declaring that we are „living on the volcano of civilization" (ibid.. p. 17) „under the shadow of an apocalypse of civilization" (ibid., p. 47), Beck historicizes the sacral representation of „risk" in an equally millenial way. Risk heralds a world-historical transformation of immense and heretofore unimaginable force. „The harmful. threatening, inimical lies in wait everywhere." Beck declares. „but whether it is inimical or friendly is beyond one's own power of judgment" (ibid., p. 53). One can be certain, however. that the coming transformation will be of a total and radical kind.

„With the industrially forced degradation of the ecological and natural foundations of life. a historically unparalled and so far completely uncomprehended social and political dynamic is set in motion". (Ibid., p. 80)

We are in the midst of a decaying civilization pregnant with the new.

„The socio-historical situation and its dynamic is comparable to the situation during the waning of the age of feudalism at the threshold of the industrial society ... The social risk positions and political potentials ... call into question the foundations of modernization as it has so far been known." (Ibid.. p. 57)

Indeed. we are already in the midst of a transition that has completely overturned the components of mundane social life...abolish[ing] the foundations and categories according to which we have thought and acted to this point, such as space and time, work and lesiure time, factory and nation state, indeed even the borders between continents". (Ibid., p. 22).

The historical dynamic of millenial religions emerged from the tension generated by the struggle between sacred and profane. Beck's account, like other narratives of secular social salvation, is structured in the same way. On the one hand, the language he uses to describe the immense transformatory forces recalls the figures Old Testament prophets employed to foretell the impending destruction that a jealous God would wreck on their morally polluted land. Decrying „the slave morality of civilization" (ibid., p. 33), Beck foresees a „maelstrom of hazards" (ibid., p. 37) that will make „the Earth uninhabitable" (ibid., p. 38). „Catastrophes" (ibid., pp. 24, 28, 29) will occur, and they will cause „irreversible harm" (ibid., p. 23). We are in „the final and eternal autumn" (ibid., p. 31) of history. Yet, just as the historical linearity of the millenial religious narrative proferred on humans the paradoxical ability to exercise their agency and reform, Beck is careful to describe impending environmental disaster as an imminent and terrifying threat, but not necessarily an historical inevitability. Behind the backs of the agents of modernization, he dialectically suggests, the disasters of risk society and the modernizers' self-interested attempts to ameliorate them may actually be preparing the path for radical transformation of a positive kind. „Determinations of risks," Beck avers (ibid., p. 28, original italics), „are the form in which ethics, and with it also philosophy, culture and politics, is resurrected *inside* the centers of modernization – in business, the natural sciences and the technical disciplines." The increasingly intense, fear- driven efforts to determine possible risks are producing „an unwanted means of democratization in the fields of industrial production and management, which somehow does become public discussion" (ibid.). For Marx, the very egoism and impersonality of capitalism, its lack of concern for any and all human particularities, had the unforeseen effect of breaking down the barriers of localism. thus paving the way for cosmopolitanism and solidarity on an unprecedented, international scale. Risk societies are described as operating in the same way. They „contain within themselves a grass-roots developmental dynamics that destroys

boundaries" (ibid., p. 47). „Thus it is also and especially in denial and non-perception." Beck (ibid., p. 46, original italics) asserts, „that the *objective community* of a global risk comes into being." A new worldwide solidarity is emerging, stimulated not by hope but by fear.

„The movement set in motion by the risk society ... is expressed in the statement: I am afraid! The commonality of anxiety takes the place of the commonality of need. The type of the risk society marks in this sense a social epoch in which solildarity from anxiety arises and becomes a political force." (Ibid., p. 49)

In this fear-inspired, solidary, and international opposition that arises in opposition to the terror of the risk society there emerges the possibility for a new kind of utopia.

„Whereas the utopia of equality contains a wealth of substantial and positive goals of social change, the utopia of the risk society remains peculiarly negative and defensive. Basically, one is no longer concerned with attaining something „good," but rather with preventing the worst: self-limitation is the goal which emerges. The dream of class society is that everyone wants and ought to have a share of the pie. The utopia of the risk society is that everyone should be spared from poisoning." (Ibid.).

Only this kind of objectively produced emphasis on limits can quell the voracious technological appetites of industrial capitalism and allow „the utopia of ecological democracy" (Beck 1992b, p. 118) finally to emerge.

7. Conclusion

In this paper we have presented elements of a general model of social and and social-scientific discourses on technology and risk. We have argued that discourses on technological society are fuelled by an underlying cultural logic of utopic and dystopic narrative forms. Understanding these narratives is essential to understanding the social dynamics of risk society itself, and that where theory neglects this cultural dimension it tends to come unstuck. While we have focussed our discussion by critically discussing the work of Ulrich Beck, we believe his work typifies the contemporary social scientific approaches to risk and technology more broadly. Notwithstanding its moral intent, by interpreting risk consciousness as the product of technologies and risks themselves, Beck's thesis accords to them a kind of phantom objectivity. Much the same can be said of Douglas and Wildavsky, who focus causal responsibility on demagogic activists, social structures and the blind contingencies of historical accident. Insofar as environmental

risk is portrayed as if it were a *deus ex machina* or as *deus ex societa*. as if its society wide construction and perception were devoid of human imagination and moral commitment. then there is no logically coherent way that social theory can describe or recommend politically and morally inspired social change.

What is required, we have proposed. is a more cultural theory of technological risk. Such a theory can assist not only in resolving the empirical and theoretical conundra that plague Beck, Douglas and Wildavsky but also serve as the basis for a morally enriched theory of risk societies. For it is precisely the restoration of human agency and moral responsibility that a strongly cultural reference allows. Only if the symbolically constructed dimension of social structure is forcefully acknowledged can the responsibility for contemporary social life, at its best and at its worst, be brought back in. This is hermeneutics with a moral intent.

Bibliography

Alexander. J., 1982: The Antimonies of Classical Thought: Marx and Durkheim. Berkeley. University of California Press.

Alexander, J., 1993: The Promise of a Cultural Sociology: Technological Discourse and the Sacred and Profane Information Machine, pp. 293–323 in Neil J. Smelser and Richard Münch, eds., Theory of Culture. Berkeley and Los Angeles. University of California Press.

Alexander. J., P. Smith, and S. Sherwood 1993: Risking Enchantment: Theory and Method in Cultural Analysis. Culture (1993) 8/1: 10–14.

Beck. U., 1992a: [1986]. The Risk Society: Towards a New Modernity. London. Sage.

Beck. U., 1992b: From Industrial Society to the Risk Society: Questions of Survival, Social Structure and Ecological Enlightenment. Theory, Culture, and Society 9 (1): 97–123.

Bell, D., 1973: The Coming of Post-Industrial Society. New York. Basic Books.

Ben-Yehuda, N., 1985: Deviance and Moral Boundaries. Chicago. Chicago University Press.

Blauner, R., 1964: Alienation and Freedom. Chicago, University of Chicago Press.

Bloor. D., 1976. Knowledge and Social Imagery. London. Routledge and Keegan Paul.

Douglas, M. and A. Wildavsky, 1982: Risk and Culture: An Essay on the Selection of Technical and Environmental Dangers. Berkeley and Los Angeles: University of California Press.

Eyerman. R. and A. Jameson. 1994: Seeds of the Sixties. Berkeley and Los Angeles: University of California Press.

Fussell. P., 1975: The Great War in Modern Memory. New York: Oxford University Press.

Garfinkel. H., M. Lynch, and E. Livingston. 1981: The Work of a Discovering Science Construed with Materials from the Optically Discovered Pulsar. Philosophy of Social Science 11: 131–58.

Gibson. J.W., 1986: The Perfect War: Technowar In Vietnam. New York. Atlantic Monthly Press.

Gouldner, A., 1979: The Future of Intellectuals and the Rise of the New Class. New York. Seabury.

Grove, R., 1995: Green Imperialism. Cambridge. Cambridge University Press.

Gusfield, J., 1976: The Literary Rhetoric of Science: Comedy and Pathos in Drinking Driver Research. American Sociological Review 41: 16–33.

Habermas, J., 1968a: Technology and Science as 'Ideology', pp. 31–49 in Habermas, Toward a Rational Society. Boston. Beacon.

Habermas, J., 1968b: Technical Progress and the Social Life- World. pp. 50–61 in Habermas, loc. cit.

Knorr-Cetina, K., 1994: Primitive Classification and Postmodernity: Towards a Sociological Notion of Fiction. Theory, Culture, and Society 11: 1–22.

Latour, B. and S. Woolgar, 1979: Laboratory Life: Social Construction of Scientific Facts. Beverly Hills. Sage.

Merton, R., 1970: Science, Technology and Society in Seventeenth Century England. New York. Harper and Row.

Mosse, G.L., 1964: The Crisis of German Ideology. New York. Grosset and Dunlap.

Pool, I. de S., 1983: Forecasting the Telephone. Norwood. N.J. Ablex.

Smelser, N., 1959: Social Change in the Industrial Revolution. Chicago. University of Chicago Press.

Smith, H.N.S., 1950: Virgin Land: The American West as Symbol and Myth. Cambridge. Harvard University Press.

Tucker, Kenneth H. forthcoming. Public Discourse and the Fate of Labor: An Analysis of Revolutionary Syndicalism in France. New York. Cambridge University Press.

West, B. and Smith, P., 1996a: Durkheim, Discourse and Drought. Australian and New Zealand Journal of Sociology Vol. 32., 1: 93–102.

West, B. and Smith, P., 1996b: Natural Disasters and National Identity: Time, Space and Mythology. Manuscript. University of Queensland.

Wiener, M.J., 1981: English Culture and the Decline of the Industrial Spirit, 1850–1980. New York. Cambridge University Press.