# World Risk Society as Cosmopolitan Society?

Ecological Questions in a Framework of Manufactured Uncertainties

# Ulrich Beck

RISK SOCIETY, fully thought through, means world risk society. For its axial principle, its challenges, are dangers produced by civilization which cannot be socially delimited in either space or time. In this way the basic conditions and principles of the first, industrial modernity – class antagonism, national statehood, as well as the images of linear, technical-economic rationality and control – are circumvented and annulled (the concept 'world risk society' has already been introduced in Beck, 1986/1992a; and Beck, 1988/1995, 1992b).

It is clear, then, which concepts will *not* be employed here. The focus will not be on 'nature' or the 'destruction of nature', nor on 'ecological' or 'environmental problems'. Does this have to do with a systematic setting of goals? Yes, it does – as we shall see. In fact, we shall propose – for the sociological analysis of ecological questions – a conceptual framework which allows us to grasp them as problems not of the *environ*ment or surrounding world, but of the *inner* world of society. In place of the seemingly self-evident key concepts of 'nature', 'ecology' and 'environment', which have their ground in an opposition to the social, this framework starts beyond the dualism of society and nature. Its central themes and perspectives have to do with *fabricated uncertainty* within our civilization: risk, danger, side-effects, insurability, individualization and globalization.

It has often been objected that such talk of a world risk society encourages a kind of neo-Spenglerism and blocks any political action. We shall see, however, that the opposite is also the case. In the self-understanding of world

Theory, Culture & Society 1996 (SAGE, London, Thousand Oaks and New Delhi),
Vol. 13(4): 1–32

risk society, society becomes reflexive in three senses (on reflexive modernization see the various positions of Beck, Giddens and Lash in Beck et al., 1994). First, it becomes an issue and problem for itself: global dangers set up global mutualities, and indeed the contours of a (potential) world public sphere begin to take shape. Second, the perceived globality of the self-endangerment of civilization triggers a politically mouldable impulse towards the development of co-operative international institutions. Third, the boundaries of the political come to be removed: constellations appear of a subpolitics at once global and direct, which relativizes or circumvents the co-ordinates and coalitions of nation-state politics and may lead to world-wide 'alliances of mutually exclusive beliefs'. In other words, 'cosmopolitan society' (Kant) can take shape in the perceived necessity of world risk society.

#### I. Elements of a Theory of World Risk Society

The Indeterminacy of the Concepts of 'Nature' and 'Ecology'

The concept of 'ecology' has had quite a success story. Today, responsibility for the condition of nature is laid at the door of ministers and managers. Evidence that the 'side-effects' of products or industrial processes are endangering the basic conditions of life can cause markets to collapse, destroying political confidence as well as economic capital and belief in the superior rationality of experts. This success, in many respects thoroughly subversive, disguises the fact that 'ecology' is a quite vague concept; everyone gives a different answer to the question of what should be preserved.<sup>1</sup>

'Again I came up against all the claptrap about nature', writes the German poet Gottfried Benn (1986: 71ff).

Snow, even when it does not melt, hardly provides any linguistic or emotional themes; you can fully grasp its indisputable monotony without going out of doors. Nature is empty and desolate; only petty-bourgeois minds see something in it – poor devils who have to keep taking the air. For example, forests lack any thematic material and everything below 1500 metres is old hat, ever since you have been able to see and experience Mount Palü in the cinema for one mark. . . . Steer clear of nature! It messes up your thoughts and has a notoriously bad effect on your style! Natura – a feminine noun, of course! Always concerned to draw off the male's semen, to copulate with him and tire him out. But is nature at all natural? It starts something and then lets it lie: beginnings and just as many interruptions, changes of direction, failures, desertions, contradictions, things flaring up, meaningless deaths, experiments, games, appearances of reality - the classroom example of the unnatural! And it is also uncommonly laborious, marching up the hill and down again: ascents that are ever cancelling each other out, clear views all around that continually become blurred, hitherto unknown and then forgotten lookout points - stupid tricks, in other words.

If someone uses the word 'nature', the question immediately arises: what *cultural model* of 'nature' is being taken for granted? Nature 'in hand', driven

to exhaustion by industry? Or the country life of the 1950s (as it appears today in retrospect or as it appeared then to people living in the country)? Mountain solitude before there was a book called *Wandering in the Solitary Mountains*? The nature of the natural sciences? Or as it is sold in the tourist supermarket brochures of world solitude? The 'hard-headed' view of businessmen that industrial operations on nature can always be fully compensated? Or the view of 'sensitive' people stirred by nature, who consider that even small-scale operations may cause irreparable damage?

So, nature itself is not nature: it is a concept, a norm, a recollection, a utopia, an alternative plan. Today more than ever. Nature is being rediscovered, pampered, at a time when it is no longer there. The ecological movement is reacting to the global state of a contradictory fusion of nature and society, which has superseded both concepts in a relationship of mutual linkages and injuries of which we do not yet have any idea, let alone any concept. In the ecological debate, attempts to use nature as a standard against its own destruction rest upon a naturalistic misunderstanding. For the nature invoked is no longer there (Beck, 1992a: 81; 1995: 58-72; Oechsele, 1988). What is there, and what creates such a political stir, are different forms of socialization and different symbolic mediations of nature (and the destruction of nature). It is these *cultural concepts* of nature, these opposing views of nature and their (national) cultural traditions which, behind the disputes among experts and the technical formulae and dangers, have a determining influence on ecological conflicts in Europe, as well as between Europe and 'Third World' countries and within those countries themselves.2

But if nature 'in itself' cannot be the analytic reference for the ecological crisis and for a critique of the industrial system, what can play this role? A number of answers are possible. The most common is: the *science* of nature. Technical formulae – toxicity of air, water and food, climatological models, or feedback loops of the ecosystem conceived along cybernetic lines – are supposed to be decisive for whether damage and destruction are tolerable. This approach, however, has at least three drawbacks. First, it leads straight towards 'ecocracy', which differs from technocracy through its greater extent of power (global management), crowned with a distinctively good conscience.

Second, it ignores the significance of cultural perceptions and of intercultural conflict and dialogue. For the same dangers appear to one person as dragons, and to another as earthworms. The best example of this is the assessment of the hazards of atomic energy. For our French neighbours, nuclear power stations symbolize the pinnacle of modernity; adults take their children to them on bank-holiday pilgrimages of awe. Nothing has changed as a result of Chernobyl, or of the realization that even today, ten years later, all the dead and injured from that 'accident' have not yet been *born*.

Third, natural-science approaches to ecological questions again imply hidden cultural models of nature (e.g. the model characteristic of scientific systems, which clearly differs from the earlier one of natural conservation).

#### 4 Theory, Culture & Society

Of course, everyone has to think in the concepts of natural science, simply to perceive the world as ecologically threatened. Everyday ecological consciousness is thus the exact opposite of some 'natural' consciousness: it is a totally scientific view of the world, in which chemical formulae determine everyday behaviour.<sup>3</sup>

And yet, all manner of experts can never answer the question: how do we want to live? What people are and are not prepared to go on accepting, does not follow from any technical or ecological diagnosis of dangers. This must rather become the object of a global dialogue between cultures. And it is precisely that which appears as the aim in a second perspective, associated with the science of *culture*. Here, the scale and urgency of the ecological crisis vary according to intracultural and intercultural perceptions and evaluations.

What kind of truth is it – we might ask with Montaigne – which ends on the border with France and is then regarded as pure illusion? Dangers, it would seem, do not exist 'in themselves', independently of our perceptions. They become a political issue only when people are generally aware of them; they are social constructs which are strategically defined, covered up or dramatized in the public sphere with the help of scientific material supplied for the purpose. Not by chance, two Anglo-Saxon social anthropologists – Mary Douglas and Aaron Wildavsky – have been developing this analysis since their book *Risk and Culture* was published in 1983. Douglas and her co-author argue there (as an affront to the rising ecological consciousness) that there is no substantive difference between the dangers posed in early history and in developed civilization – except in the mode of cultural perception and the way in which it is organized in world society.

True and important though this view may be, it is still not satisfactory. For, among other things, we know that people in the Stone Age did not have the capacity for nuclear and ecological annihilation, and that the dangers posed by lurking demons did not have the same political dynamic as the man-made hazards of ecological self-destruction.<sup>4</sup>

#### The Realism-Constructivism Debate

This is where the theory of world risk society begins. If it is asked what is the justification for this concept, two answers are possible: one *realist* and one *constructivist* (for an interpretation and critique see Szerszynsk et al. 1966; Wynne, 1996a). In the realist view, the consequences and dangers of developed industrial production 'are' now global. This 'are' supports itself upon scientific findings and debates about ongoing destruction (of the ozone layer, for example); the development of productive forces is intertwined with the development of destructive forces, and together these are generating – in the shadow of latent side-effects – the novel dynamic of conflict of a world risk society. This dynamic is expressed in such things as the Chernobyl disaster, when an 'atomic cloud' terrified the whole of Europe and forced people to make major changes even in their day-to-day private lives.<sup>5</sup> But it is also expressed in the knowledge of every mature newspaper-reader or TV viewer

in Western societies, that the poisoning of air, water, soil, plants and food-stuffs 'knows no boundaries'.

In this 'realist' perspective, then, talk of a world risk society reflects the forced global socialization due to dangers produced by civilization. The new state of the world is the basis for the growing importance of transnational institutions. To the global dangers correspond, 'realistically', global models of perception, world fora of public life and action, and finally – if the supposed objectivity gives sufficient impetus for action – transnational actors and institutions.

The strength of realism can also be seen in its clear historical 'storyline', in which the development of industry or industrial society has gone through two distinct phases. In a first phase it was class or social questions that were paramount; in a second phase it is ecological questions. Yet it would be much too simple to assume that ecology has supplanted the class question; it is quite apparent, and needs to be stressed, that the ecological, labour-market and economic crises are overlapping and may well aggravate one another. A phase model stands to gain in persuasive force, however, if it counterposes the global reach of ecological questions to the issues of poverty and class that dominated the national phase of industrial capitalism. For in this way, the patterns of conflict of industrial society are rendered null and void. To assume the objectivity of global dangers is to further the construction of (centralized) transnational institutions. This point of view, often suspected of being naive, thus involves – or even produces – a considerable impetus to power, in order to carry through a policy of 'sustainable development', as it is called in a new magic phrase.

A superficial look at such realist ways of grounding the world risk society is enough to show how feeble they really are. In the first place, the unreflexive realist viewpoint forgets or suppresses the fact that its 'realism' is sedimented, fragmented, mass-media collective consciousness. Of course, as Bryan Wynne argues, public knowledge about risk is often not expert but lay knowledge, from which social recognition has been withheld.<sup>6</sup> But ecological images and symbols do not at all have intrinsic certainty: they are culturally perceived, constructed and mediatized; they are part of the social production of knowledge, with all its contradictions and conflicts (social movements, television, daily press, environmental organizations, research institutes and so on). The definitional power of realism rests upon exclusion of questions that speak more for the interpretative superiority of constructivist approaches. How, for example, is the borrowed self-evidence of 'realistic' dangers actually produced? Which actors, institutions, strategies and resources are decisive in its production? These questions can be meaningfully asked and understood only within an anti-realist, constructivist perspective.

In a social-constructivist view, then, talk of a 'world risk society' rests not on a (scientifically diagnosed) globality of problems but on *transnational 'discourse coalitions'* (Hajer, 1996), which assert within public space the issues of a global environmental agenda. These coalitions were

forged and became powerful only in the 1970s and 1980s, and in the present decade — especially since the Rio Earth Summit — they have begun to reshape the thematic landscape around problems of the planet. This obviously requires institutionalization of the environmental movement and the building of networks and transnational actors (IUN, WWF, Greenpeace, but also environment ministries, national and international legislation and agreements, and industries and big science rising to the task of global management of world problems). Nor is that all. Such actors must also be successful in what they do, and continually assert themselves against powerful counter-coalitions.

So far, the global approach to problems – the very talk of a world risk society – has encountered three types of counter-argument. First, it is argued that the relevant (lay and expert) knowledge is far from clear about the global hazards; many also refer to discrepancies between the actual state of expert knowledge and the public drama of danger and crisis. Second, the global definition of environmental problems is criticized as a kind of ecological neo-imperialism, especially by actors and governments in the so-called Third World. The idea here is not only that Western states thereby assure themselves of a lead in knowledge and development over poorer countries, but above all that they cover up their own primary responsibility for worldwide threats to civilization. Third, the objection is raised that the global definition of ecological questions leads to a perversion of 'nature conservation' into its opposite, a kind of world-management. This then sets up new monopolies of knowledge - the hi-tech 'global circulation models' of the International Panel for Climate Change (IPCC), with their inbuilt forms of politics and their demands for disciplinary interpretation and control (especially of the natural and computer sciences).

Furthermore, it is becoming noticeable that talk of a world risk society does not go together with the overcoming of ethnic-nationalist conflicts of perception and evaluation. On the contrary, it seems to accompany the emergence of new ones (e.g. in disputes over 'degrees' of danger, or who is 'responsible', or the need for counter-measures), which serve to define the future winners and losers among nations.

However contradictory the essentialist-realist and constructivist approaches may be in their methods and basic assumptions, they agree with each other in their diagnoses. For, in different ways, they both justify talk of a world risk society. This should by no means lead us to minimize the differences. It is particularly remarkable that realism lays the stress on world risk society, and constructivism on world risk society. In the constructivist optic, transnational actors must already have pushed through their discursive politics, so that the globality of environmental issues is decisive for social perceptions and demands for action. On the 'realist' side, by contrast, this globality is based only upon the floating ostensible self-authority of objective dangers. We might say that realism conceives the ecological problematic as 'closed', whereas constructivism maintains its openness in principle. For the one, it is the dangers (the doomsday scenarios) of the world risk

society that are the central focus; for the other, it is the *chances*, the contexts in which actors operate. For the one, global dangers must first of all give rise to international institutions and treaties. For the other, talk of global environmental dangers already assumes supranational discourse coalitions engaging in successful action.

But another question poses itself here. Is it really true that realism and constructivism, in their approaches to world risk society and their ways of explaining it, are in every respect mutually exclusive? This is the case only as long as both sides are assumed to play *naively*. For just as there is a belief that nature and reality simply exist as such, so too is there a belief in pure constructivism that is nothing but constructivist. As long as we remain at this level, we will fail to recognize the interpretative content of *reflexive realism*, and hence its potential role in *strategies of power*. Such a reflexive realism does delve into the sources which make of 'reality constructs' a 'reality' for the first time; it investigates how self-evidence is produced, how questions are curtailed, how alternative interpretations are shut up in black boxes and so on.

If one distrusts simple counterpositions, it is thus possible to counterpose or juxtapose 'reflexive' realism and 'naive' constructivism. Naive constructivism is unable to see the game of constructivist realism, and so remains stuck in what one might call a realist misunderstanding of its mere-constructivism. It fails to recognize, as it were, that constructions of reality which are meant to last (and to guide action) must cancel their very constructedness — otherwise they will be constructed as *constructions* of reality and not as *reality*. Similarly, naive constructivism does not grasp the characteristic materiality or compulsiveness of global dangers, which is in every way as powerful as economic constraints. Constructivist analyses, if they are blind to the difference between destruction as an *event* and *talk* about that event, may cognitively play down dangers. For it is possible that, in leaving 'cognitive elements' out of account, they will overlook the fact that dangers have destructive, painful and disintegrative effects and therefore a chaotic-diabolic significance.

How is the Nature-Society Distinction Socially Constructed and Sociologically Reconstructed?

A number of sociological research programmes, starting from different points, are working on this question of how the old dualism between nature and society can be superseded, at the same time that it is redefined and reconceptualized in the sense of symbolically mediated social relations with nature.

From a context of scientific and technological research, Bruno Latour (1993) has suggested dropping the nature–society dualism in favour of a sociology of artefacts or – as he puts it – of hybrids. As to what is to replace the basic distinction between society and nature (society and technique), Latour replies: the new unity of their indistinguishability. He can spell this out quite convincingly in negative terms, but not when it comes to its positive

8

meaning. The reader is left feeling as the angel does in Walter Benjamin's parable. To decipher the meaning of the text, all you can do is stand with your back to the headwind of the arguments. If you want to know and understand more, you have to consult Latour's empirical-historical studies relating to actor-network theory.<sup>7</sup>

In the field of gender research, a number of thoroughly competitive attempts at a *feminist eco-sociology* have recently been produced. What they have in common is the assumption of a special relationship between woman and nature – where 'special' implies a concept of the 'normal' or 'other'. This is found in the patriarchally determined relationship between man and nature. Technical-industrial domination of nature thus has its parallel (its basis?) in the domination of men over women, and the former can only be eradicated along with the latter. The special relationship between woman and nature is conceived in either essentialist or constructivist terms, or as a combination of the two. In any case it is women who – not least because of their experience of motherhood – appear to be closer to nature. This is sometimes understood symbolically or spiritualistically – for instance, in the sense that 'women have always thought like mountains' (Doubiango, 1989: 41).

In the view of Charlene Spretnak (1989: 128f.), experiences of women living together point to

the truths of naturalism and the holistic proclivities of women. . . . I do not mean 'merely' our power to form people from our very flesh and blood and then to nourish them from our breasts. . . . I mean that there are many moments in a woman's life wherein she gains experiential knowledge, in a powerful body/mind union, of the holistic truths of spirituality.

Ynestra King (1989: 22f.) turns this essentialist view into a political one. Assuming that the supposed proximity of women to nature is a social construct, there are three options for feminists. First, women can be integrated into the world of men, so that the woman—nature bond is severed. Second, women can strengthen this bond. And third:

although the nature–culture dualism is a product of culture, we can nonetheless *consciously choose* not to sever the woman–nature connection by joining male culture. Rather, we can use it as a vantage point for creating a different kind of culture and politics that would integrate intuitive, spiritual and rational forms of knowledge, embracing both science and magic insofar as they enable us to transform the nature–culture distinction and to envision and create a free, ecological society.

In an approach that combines the sociology of technology with feminist ecology, Donna Haraway (1991: 150) has demonstrated to great intellectual and political effect how the traditional boundaries between the sexes (as well as between nature and culture, man and animal, man and machine) are generally fading under the influence of computer and bio-technologies. She

argues that this should not be mourned as a loss, but rather seized as a chance for 'pleasure in the confusion of boundaries and responsibility in their construction'.

As Barbara Adam's work (1995, 1996) so finely shows, an explicit focus on *social time* both deepens eco-feminist analysis and emphasizes the acculturation of nature.

As rhythmicity and synchronization, growth and decay, 'natural time' is implicated in human being-becoming, experience and knowledge. As memory and anticipation, it constitutes our temporal horizon. As physical measure and source for synchronization, it is integral to social organization and the regulation of cultural activity. As externalized machine, time is linked to industrial production, to the role of abstract exchange-value, and to the social control of time. To recognize ourselves as having evolved and thus being and creating the times of nature allows for the humanly constructed and symbolized aspects of time to become one expression among others. (1996: 92)

The meanings and dimension of 'natural' and 'social' time connect the realist and constructivist views in a most thoughtful manner.

Following on from the theory of late capitalism, some authors working on theoretical and empirical research in the field of *social ecology* have identified what they call a *social crisis in the relationship to nature*. While coming out against the dead-ends of naturalism and socio-centrism, they nevertheless try to combine the achievements of both. Neither the material problems describable by the natural sciences, nor the cultural-symbolic (over-)patterning of natural destruction on which constructivism lays such stress, can alone constitute the kernel of the ecological crisis. What is central, they argue, is that these apparently exclusive approaches and certainties should be considered together and combined in concrete research, with all the historically inevitable conflicts between scientific disciplines.

The social-ecological approach thus seeks to resolve the dilemma of naturalism or socio-centrism through the interaction between different forms of *science* and *knowledge*.

The distinguishing features of this approach are, first, that a number of different natural relationships are each grasped as specific fields to be fought over; second, that their scientific handling is bound up with the demand for a new *interdisciplinarity*, a new relationship between the natural and social sciences; and third, that plurality is embedded in a general explanatory model of society, a model of 'transformational kernel and cultural shell'. (Scharping and Görg, 1994: 190; see also Becker, 1990)

To be properly understood and assessed, however, these three themes of a 'crisis of social relationships to nature' would have to be formulated and translated within the context of (social-)scientific research.

The essentialist meaning in talk of nature and the destruction of nature is here replaced by corresponding *expert and anti-expert knowledge*: such is

the view of Brian Wynne and Maarten Hajer. The latter, in criticizing mainly Anglo-American discourse and cultural theory, has developed an approach to this dimension of knowledge that is both politically and analytically more radical. Paradoxical though it may seem, the naturalist-essentialist content in talk of 'the destruction of nature' thereby changes into action-related theory of actors and institutions. At the centre of things now are 'discourse coalitions' that stretch across the boundaries of classes, nation-states and systems. They are, as it were, discursive landscape architects: they create, design and alter 'cognitive maps', 'story lines' or 'taboos'. Reality becomes, strictly speaking, project and product of action, so that a long-unclarified ambiguity in talk of the 'production' (Herstellen) of reality assumes considerable importance. For the main stress in such talk may be *cognitive* (in which case it refers only to the construction of knowledge), or it may fall more narrowly on action (decision, work, material production [Produktion]) and thus on the changing or shaping of realities. It may often be very difficult in concrete cases to demarcate these two aspects of production (Herstellen), but they refer to different modes of the 'creation of reality', of the 'shaping of the world'. Haier's achievement is, among other things, to have corrected the cognitive bias of discourse and culture theory within an action-institution perspective. The point is no longer simply how realities are constructed in the world risk society (e.g. in the public sphere, through media reporting of dangers); there is also the question of how reality-in-itself is (re-)produced by discourse politics and coalitions within institutional contexts of decision, action and work.

'Constructions of reality' may, so to speak, be distinguished according to whether they have more or less 'reality'. The closer they are to and in institutions (understood as the institutionalization of social practices), the more powerful and closer to decision and action they are — and therefore the more 'real' they become or appear. Essentialism, when illuminated by the sociology of knowledge, turns into a kind of strategic institutionalism geared to power and action. In a world civilization that dissolves everything into decisions, reality-in-itself derives from powerful structures of action, deeprooted decision and work routines, in which cognitive maps are 'realized' or just redrawn. The straightforward way in which people now talk in daily life of 'nature' and the 'destruction of nature' may indicate a paradoxical strategy of the construction of deconstruction. The impression of having been constructed is thereby (to a greater or lesser extent) reflexively and powerfully destroyed, and the appearance of reality-in-itself is produced.

Maarten Hajer only touches upon these questions concerning the possibility of 'really real' (and thus deconstructed) constructions of social reality. But in a number of international comparative studies, he brings out and illustrates a whole range of discursive (political) strategies: the symbolic politics of passing fads; selective definition of certain themes and issues as 'unique'; attempts to inspire confidence by pictorial representation of threats; discursive building up of macro-actors; social constructions of ignorance; the use of 'black boxing' (especially important as a measure of

power) to produce self-evident truths, which then really are self-evident; the drawing of functional analogies to cover up contradictions and so create the appearance of integratability, and so on. 'In my terms the ecological crisis is then a "discourse of self-confrontation" that calls for a reconsideration of the institutional practices that brought it about.'

#### Beyond Insurability

With these points in mind, the theory of world risk society can be made somewhat more concrete. It shares in the farewell to the society-nature dualism that Bruno Latour, Donna Haraway and Barbara Adams conduct with such intellectual flair. The only question is: how do we handle nature after it ends? This question, which both eco-feminism and the crisis theory of social-natural relations attempt to illuminate in various ways, is further developed in the theory of world risk society (picking up Hajer's politicalinstitutional twist to discourse theory) in the direction of institutional constructivism. 'Nature' and the 'destruction of nature' are institutionally produced and defined (in 'lay-expert conflicts') within industrially internalized nature. Their essential content correlates with institutional power to act and to mould. Production and definition are thus two aspects of the material and symbolic 'production' of 'nature and the destruction of nature'; they refer, one might say, to discourse coalitions within and between quite different, ultimately world-wide action networks. It will be the task of future research to examine in detail how – and with what discursive and industrial resources and strategies – these differences in the 'naturalness' of nature, in its 'destruction' and 'renaturalization', are produced, suppressed, normalized and integrated within institutions and in the conflict between cognitive actors.

The theory of world risk society translates the question of the destruction of nature into another question. How does modern society deal with self-generated manufactured uncertainties? The point of this formulation is to distinguish between decision-dependent *risks* that can in principle be brought under control, and *dangers* that have escaped or neutralized the control requirements of industrial society. This latter process may take at least two forms.

First, there may be a failure of the norms and institutions developed within industrial society: risk calculation, insurance principle, the concept of an accident, disaster prevention, prophylactic aftercare. Is there a ready indicator of this? Yes, there is. Controversial industries and technologies are often those which not only do not have private insurance but are completely cut off from it. This is true of atomic energy, genetic engineering (including research), and even high-risk sectors of chemical production. What goes without saying for motorists – not to use their car without insurance cover – seems to have been quietly dropped for whole industrial branches and sunrise technologies, where the dangers simply present too many problems. In other words, there are highly reliable 'technological pessimists' who do not agree with the judgement of technicians and relevant authorities about

the harmlessness of their product or technology. These pessimists are the insurance actuaries and insurance companies, whose economic realism prevents them from having anything to do with a supposed 'nil risk'. World risk society, then, balances its way along *beyond the limits of insurability*. Or, conversely, the criteria that industrial modernity uses in making provision for its self-generated dangers can be turned around into yardsticks of criticism.<sup>9</sup>

Second, the pattern of decisions in industrial society, and the globality of their aggregate consequences, vary between two distinct epochs. To the extent that the decisions bound up with the scientific, technical-economic dynamic are still organized at the level of the nation-state and the individual enterprise, the resulting threats make us all members of a world risk society. To assure the health and safety of citizens, no task can be performed at national level in the developed system of danger-industrialism. This is one of the essential lessons of the ecological crisis. With the appearance of ecological discourse, there is talk every day about the end of 'foreign politics', the end of 'internal affairs of another country', the end of the national state. Here we can see immediately a central strategy in the production of difference and lack of difference. The established rules of allocation and responsibility - causality and guilt - break down. This means that their undaunted application in administration, management and legal terminology now produces the opposite result: dangers grow through being made anonymous. The old routines of decision, control and production (in law, science, administration, industry and politics) effect the material destruction of nature and its symbolic normalization. The two complement and accentuate each other. Concretely, it is not rule-breaking but the rules themselves which 'normalize' the death of species, rivers or lakes.

This circular movement between symbolic normalization and permanent material threats and destruction is indicated by the concept of 'organized irresponsibility'. The state administration, politics, industrial management and research negotiate the criteria of what is 'rational and safe' – with the result that the ozone hole grows bigger, allergies spread on a mass scale and so on.

Alongside (and independently of) physical explosiveness, discourse-strategic action tends to make *politically* explosive the dangers normalized in the legitimation circle of administration, politics, law and management, which spread uncontrollably to assume global dimensions. We might say, both with and against Max Weber, that purposive-rational bureaucracy transforms all-round guilt into acquittal — and thereby, as an unintended consequence, threatens the very basis of its claim to rational control.

The theory of world risk society thus replaces talk of the 'destruction of nature' with the following key idea. The conversion of the unseen side-effects of industrial production into global ecological flashpoints is not strictly a problem of the world surrounding us — not a so-called 'environmental problem' — but rather a deep institutional crisis of the first (national) phase of industrial modernity ('reflexive modernization'). So long as these

new developments are grasped within the conceptual horizon of industrial society, they continue to be seen as negative side-effects of seemingly accountable and calculable action ('residual risks'), rather than as trends which are eroding the system and delegitimating the bases of rationality. Their central political and cultural significance becomes clear only in the concept and vantage-point of world risk society, where they draw attention to the need for reflexive self-definition (and redefinition) of the Western model of modernity.

In the phase of discourse about world risk society, it may become accepted that the threats generated through technological-industrial development – as measured by the existing institutional yardsticks – are neither calculable nor controllable. This forces people to reflect on the bases of the democratic, national, economic model of the first modernity, and to examine prevailing institutions (the externalization of effects in economics, law, science, etc.) and their historical devaluation of the bases of rationality. Here arises a truly global challenge, out of which new world flashpoints and even wars – but also supranational institutions of co-operation, conflict regulation and consensus-building – can be 'forged' (see the next section).

The situation of the economy also undergoes radical change. Once upon a time – in the early-capitalist entrepreneurial paradise – industry could launch projects without submitting to special checks and provisions. Then came the period of state regulation, when economic activity was possible only in the framework of labour legislation, safety ordinances, tariff agreements and so on. In the world risk society - and this is a decisive change – all these agencies and regulations can play their role, and all the valid agreements can be honoured, without this resulting in any security. Even though it respects the norms, a management team may suddenly find itself put into the dock by world public opinion and treated as 'environmental pigs'. Markets for goods and services become in principle unstable - that is, out of the control of firms using household remedies. Manufactured insecurity thus appears in the core areas of action and management based upon economic rationality. The normal reactions to this are the blocking of demands for serious thought, and the condemnation as 'irrational' or 'hysterical' of the storm of protest that breaks out in spite of official agreements. The way is now open to a series of errors. Filled with pride at representing Reason itself in a sea of irrationalism, people stumble into the trap of risk conflicts that are hard to bring under control (on the logic of risk conflict see Lau, 1989; Nelkin; 1992; Hildebrandt et al., 1994).

In world risk society, industrial projects become a *political* venture, in the sense that large investments presuppose long-term consensus. Such consensus, however, is no longer guaranteed – but rather jeopardized – with the old routines of simple modernization. What could previously be negotiated and implemented behind closed doors, through the force of practical constraints (e.g. waste disposal problems, and even production methods or product design) are now potentially exposed to the crossfire of public criticism. <sup>10</sup>

For there is probably no longer any incentive for the old 'progress coalition' of state, economy and science; industry certainly raises productivity, but at the same time it is at risk of losing legitimacy. The legal order no longer guarantees social peace, because it generalizes and legitimizes the threats to life. Consequently, there is a reversal of what is politics and what is not politics. The political is becoming non-political, and the non-political political. The hour of *subpolitics* is sounding. (See Part II of this article.)

### A Typology of Global Threats

Three types of global threats may be distinguished in the application of this theory.

First, there are conflicts over what we might call 'bads' (as opposed to 'goods'): that is, *wealth-driven* ecological destruction and technological-industrial dangers, such as the hole in the ozone layer, the greenhouse effect or regional water shortages, as well as the unpredictable risks involved in the genetic engineering of plants and humans.

A second category, however, comprises risks that are directly related to poverty. The Brundtland Commission was the first to point out that not only is environmental destruction the danger shadowing growth-based modernity, but the exact opposite is also the case: a close association exists between poverty and environmental destruction. "This inequality is the planet's main "environmental" problem; it is also its main "development" problem' (World Commission on Environment and Development, 1987: 6). Accordingly, an integrated analysis of habitation and food, loss of species and genetic resources, energy, industry and human population, shows that all these things are connected with one another and cannot be treated separately.

Michael Zürn (1995: 51), from whom the ideas and data for this typology has been drawn, writes:

Between environmental destruction as a result of well-being and environmental destruction as a result of poverty there is, however, an essential difference. Whereas many wealth-driven ecological threats stem from the externalization of production costs, in the case of poverty-driven ecological destruction it is the poor who destroy themselves with side-effects for the rich. In other words, wealth-driven environmental destruction is distributed evenly around the globe, whereas poverty-driven environmental destruction strikes at particular spots and becomes international only in the form of side-effects appearing over the medium term.

The best-known example of this is the felling of the tropical rainforests, where some 17 million hectares are currently being lost every year. Other examples are toxic waste (sometimes imported from other countries) and obsolete technologies (e.g. in the chemical, nuclear and – in the future – genetic industry, as well as in genetic engineering research). These hazards are a feature of modernization processes that have been started up or broken off. Industries thus grow which are technologically capable of endangering

the environment and human life, while the countries in question do not have the institutional and political means to prevent possible destruction.

Wealth-driven or poverty-driven dangers are, as it were, 'normal': they usually arise in conformity with the rules, through the application of safety norms that have been introduced precisely because they offer no protection at all or are full of loopholes. The *third* threat, however, from NBC (nuclear, biological, chemical) weapons of mass destruction, is actually deployed (rather then used for the purposes of terror) in the exceptional situation of war. Even after the end of the East–West confrontation, the danger of regional or global self-destruction through NBC weapons has by no means been exorcised – on the contrary, it has broken out of the control structure of the 'atomic pact' between the superpowers. To the threat of military conflict between states is now added the (looming) threat of fundamentalist or private terrorism. It can less and less be ruled out that the private possession of weapons of mass destruction, and the potential they provide for political terror, will become a new source of dangers in the world risk society.

These various global threats may very well complement and accentuate one another: that is, it will be necessary to consider the interaction between ecological destruction, wars and the consequences of uncompleted modernization. Thus, ecological destruction may promote war, either in the form of armed conflict over vitally necessary resources such as water, or because eco-fundamentalists in the West call for the use of military force to stop destruction already under way (such as the clearing of tropical forests). It is easy to imagine that a country which lives in growing poverty will exploit the environment to the hilt. In desperation (or as political cover for desperation), a military attempt might be made to grab resources vital to another country's existence. Or, ecological destruction (e.g. the flooding of Bangladesh) might trigger mass emigration which in turn leads to war. Or, again, states threatened with defeat in war might turn to the 'ultimate weapon' of blowing up their own or other countries' nuclear or chemical plants, in order to threaten nearby regions or cities with annihilation. There are no limits in our imagination to the horror scenarios that could bring the various threats into relationship with one another. Zürn speaks of a 'spiral of destruction', which could build up into one great crisis in which all other crisis phenomena converge.<sup>11</sup>

All this confirms the diagnosis of a world risk society. For the so-called global threats have together led to a world where the basis of established risk-logic has been whittled away, and where hard-to-manage dangers prevail instead of quantifiable risks. The new dangers are removing the conventional pillars of safety calculation. Damage loses its spatio-temporal limits and becomes global and lasting. It is hardly possible any more to blame definite individuals for such damage: the principle of a guilty party has been losing its cutting edge. Often, too, financial compensation cannot be awarded for the damage done; it has no meaning to insure oneself against the worst-case effects of spiralling global threats. Hence there are no plans for aftercare if the worst should happen.

Looked at in this way, it is clear that there are no global threats as such; rather, they are charged and mixed in with the ethnic, national and resource conflicts that have beset the world especially since the end of the East–West confrontation – to the point that they become unrecognizable. This is one of the points made by Eva Senghaas-Knobloch. In the post-Soviet republics, ruthless diagnosis of environmental destruction goes hand in hand with political criticism of the imperial exploitation of natural resources. Talk of 'native soil' becomes, in this sense, a claim on both natural resources and national sovereignty.

It is no accident if militant, separatist movements for autonomy in the former republics of the Soviet Union - as in Brittany, Occitania or Corsica - generally cluster around two issues: language and conservation of the natural environment. Both are themes of protection of the homeland, directed first of all against the consequences of an industrial growth model which are experienced as economically unjust but are also associated with questions of cultural identity. . . . The new lines of conflict . . . are not mainly established along the 'risk-winner'/'risk-loser' axis. Insofar as this axis has any meaning at all, it is rather a question of mass flows of refugees - which may subsequently contribute to new social, political and cultural conflicts. Awareness of environmental damage and threats to the natural conditions of life is regionally and locally bound up with strivings for autonomy and demands for justice. Especially in regions where a self-standing 'civil society' has not yet been able to develop (above all, in the 'state societies' of the former Eastern bloc), this connection may lead to the supercharging of global threats with ethnicnationalist, partly militant, separation conflicts. (Senghaas-Knobloch, 1992: 66)

# II. The Emergence of a World Public and a Global Subpolitics

The Concept of 'Subpolitics'

When we speak of a world risk *society*, it is also necessary to say that global threats cause, or will cause, people to act. Two distinct perspectives – arenas or actors – are possible here: in the first, globalization *from above* (e.g. through international treaties and institutions), in the second, globalization *from below* (e.g. through new transnational actors operating beyond the system of parliamentary politics and challenging established political organizations and interest groups). There is weighty evidence for both kinds of globalization. Thus, it can be shown that the majority of international accords on the environment have been reached over an extremely short period – the last 20 years in fact (on the question of basic conditions under which international regulations can be established, see Zürn, 1995: 49–56).

Richard Falk identifies a number of political arenas in which globalization from above is negotiated and pushed through.

The response to threats against strategic oil reserves in the Middle East, the efforts to expand the GATT framework, the coercive implementation of the nuclear nonproliferation regime, the containment of South–North migration and refugee flows. . . . The legal implications of globalization-from-above would tend to supplant interstate law with a species of global law, but one at odds in most respects with 'the law of humanity'. (Falk, 1995: 117)

There is hardly need of further proof that, in the field of global environmental politics, it has long been a question (at best) of proverbial drops in the ocean. At the same time, however, a number of spectacular boycott movements operating world-wide across cultures have made it clear that the impotence of official politics in dealing with the industrial bloc is impotence with regard to the classical stage-setting. For powerful actors of a globalization from below have also appeared on the scene, especially Non-Governmental Organizations (NGOs) such as Robin Wood, Greenpeace, Amnesty International or Terre des Hommes. The UN estimates that there are now some 50,000 such groups in the world, but that does not mean much because each one, or almost each, is different. Die Zeit speaks of the 'New International' (article by Martin Merz and Christian Wernicke, Die Zeit, 25 Aug. 1995: 9ff.), which by definition falls between two stools, market and state, but which, as a third force, is gaining more and more influence and displaying its political muscle-power in relation to governments, international corporations and authorities. Here we can see the first outlines of a 'global citizenship' (Richard Falk and Bart van Steenbergen) – or, as we would put it, the new constellation of a global subpolitics. We must now examine how this has become possible and how it is now actually emerging.

With the victory march of industrial modernity, a purposive-rational system of politics is everywhere asserting itself. The common sense of this epoch is drawn from an everything-under-control mentality, which applies even to the uncontrollability that it itself produces. However, the accomplishment of this form of order and control brings about its opposite – the return of uncertainty and insecurity. 'Second-order dangers' (Wolfgang Bonss, 1995) then appear as the other side of any attempt to 'get on top' of this. Unintentionally, in the shadow of the 'side-effects' of global dangers, society thus opens out into the (sub)political. In every sphere – the economy as well as science, private life and the family as well as politics – the bases of action reach a decisive turning-point: they have to be rejustified, renegotiated, rebalanced. How is this to be conceptualized?

'Crisis' is not the right concept, any more than 'dysfunction' or 'disintegration', for it is precisely the *victories* of unbridled industrial modernization that call it into question. This is just what is meant by the term 'reflexive modernization': theoretically, application to itself; empirically, self-transformation (through individualization and globalization processes, for example); politically, loss of legitimacy and a vacuum of power. What this means may be clarified by Thomas Hobbes, the theorist of the state. As is well known, he argued for a strong, authoritarian state, but he also mentioned

one individual right of civil resistance. If a state brings about conditions threatening to life, or if it commands a citizen 'to abstain from the use of food, ayre, medicine, or any other thing, without which he cannot live', then, according to Hobbes (1968: 269), 'hath that man the Liberty to disobey'.

In terms of social politics, then, the ecological crisis involves a *systematic violation of basic rights*, a crisis of basic rights whose long-term effect in weakening society can scarcely be underestimated. For dangers are being produced by industry, externalized by economics, individualized by the legal system, legitimized by the natural sciences and made to appear harmless by politics. That this is breaking down the power and credibility of institutions only becomes clear when the system is put on the spot, as Greenpeace, for example, has tried to do. The result is the subpoliticization of world society.

The concept of 'subpolitics' refers to politics outside and beyond the representative institutions of the political system of nation-states. It focuses attention on signs of an (ultimately global) self-organization of politics, which tends to set all areas of society in motion. Subpolitics means 'direct' politics - that is, ad hoc individual participation in political decisions, bypassing the institutions of representative opinion-formation (political parties, parliaments) and often even lacking the protection of the law. In other words, subpolitics means the shaping of society from below. Economy, science, career, everyday existence, private life, all become caught up in the storms of political debate. But these do not fit into the traditional spectrum of party-political differences. What is characteristic of the subpolitics of world society are precisely ad hoc 'coalitions of opposites' (of parties, nations, regions, religions, governments, rebels, classes). Crucially, however, subpolitics sets politics free by changing the rules and boundaries of the political so that it becomes more open and susceptible to new linkages – as well as capable of being negotiated and reshaped.

## The Symbolic Mass Boycott: A Case Study of Global Subpolitics

In the summer of 1995 Greenpeace, the latter-day crusader for good causes, first succeeded in getting Shell to dispose of one of its obsolete oil rigs on land rather than in the sea. Then this campaigning multinational tried to halt a resumption of French nuclear tests by publicly pillorying President Jacques Chirac for deliberate breach of international regulations. Many asked whether it was not the end of certain basic rules of (foreign) politics, if an unauthorized actor such as Greenpeace could conduct its own domestic world politics without regard for national sovereignty or diplomatic norms. Perhaps it would be the Moonies' turn tomorrow, and then of a third private organization hoping in its way to make the rest of the world happy.

What such jibes overlooked was that the oil multinational was brought to its knees not by Greenpeace but by a mass public boycott, put together through world-wide televised indictments. Greenpeace is not itself shaking the political system, but it is making visible a vacuum of power and legitimacy that has many parallels with what happened in the GDR.

Everywhere there are signs of this coalition model of global subpolitics or 'direct politics'. Alliances of forces 'totally' incapable of allying with one another are coming into being. Thus the German Chancellor, Helmut Kohl, protesting as a citizen who was also head of government, supported the Greenpeace action against the British prime minister, John Major. Suddenly political elements were discovered and deployed in everyday activity - in the filling of petrol tanks, for example. Car drivers banded together against the oil industry (you only need to try it once to 'get a taste for it'). And in the end the state joined in with the illegitimate action and its organizers, thereby using its power to legitimize a deliberate, extra-parliamentary violation of the rules, while for their part the protagonists of direct politics sought to escape – through a kind of 'self-administered ecological justice' – the narrow framework of indirect, legally sanctioned agencies and rules. The anti-Shell alliance eventually led to a scene-switch between the politics of the first and the second modernity. National governments sat on the benches and watched, while unauthorized actors of the second modernity directed the course of the action.

In the case of the world-wide movement against President Chirac's decision to resume nuclear testing, a spontaneous global alliance actually developed between governments, Greenpeace activists and the most diverse protest groups. The French miscalculation was reflected in two aspects of the situation: (a) the Mururoa decision coincided with commemorations of the 50th anniversary of Hiroshima and Nagasaki; and (b) it was roundly condemned by a meeting of the ASEAN Forum, including both the USA and Russia. Since then, not only have there been calls for a 'champagne-free zone': international conferences of bishops and of Nordic heads of government have also added their voices to the protest. All this points to a temporary, direct-politics alliance stretching across national, economic, religious and political-ideological differences. What the European Parliament or an anyway rather placid French public opinion could never have brought off, seems to have been achieved by this global coalition of contradictory symbolic and economic forces. Now already (in mid-August 1995) the French government is giving way. It is doing everything, however, to take the wind out of the sails of the 'peace fleet' International; and so it has announced that after the current series is over, Mururoa need never again be used as a test-site for atomic weapons – it can go back to being an island paradise for holidaymakers. Not much reading of the tea leaves is required to foresee that, given the potential power of direct global politics, this will not be the last retreat on offer. One thing is immediately clear. A special feature of this politics of the second modernity is that in practice its 'globality' does not exclude anyone or anything - not only socially, but also morally or ideologically. It is, in the end, a politics without opponents or opposing force, a kind of 'enemyless politics'.

The political novelty is not that David has beaten Goliath, but that David *plus Goliath*, acting at a global level, have successfully joined together, first against a world corporation, then against a national government and one

of its policies. What is new is the alliance all around the globe between extraparliamentary and parliamentary forces, citizens and governments, for a cause that is in the higher sense legitimate: the saving of the world environment ((Um)Welt).

Something else has become apparent. The post-traditional world only appears to be breaking up into individualization. Paradoxically, the challenge of global dangers provides it with a fountain of youth – for a new transnational morality and activism, for new forms (and forums) of protest, but also for new hysterias. Status or class consciousness, belief in progress or decline, the enemy image of Communism – all these could be replaced by the humanity-wide project of saving the world environment. Global threats generate global communities – at least *ad hoc* ones for the historical moment.

Of course, the anti-Shell alliance was morally suspect. In fact, it was based on downright hypocrisy. Kohl, for instance, could use this symbolic action (which cost him nothing) to divert attention from his no-speed-limit policy on German autobahns, which is polluting the air over Europe.

German-Green nationalism and know-all attitudes also made themselves felt here beneath the surface. Many Germans want a kind of green Greater Switzerland. They dream of a Germany that will be the world's ecological conscience. Perhaps a second, ecologically motivated round of 'reparations' has here appeared from behind the scenes, mixed up with a fresh dose of 'superiority' over environmental questions that are anything but environmental - namely, a kind of new religion of secularized, individualized society. What would happen if Greenpeace International one day called for a boycott of Mercedes and Volkswagen to stop the autobahn speed-terror? And what if it enlisted the support of Switzerland, Sweden, Denmark, Austria and also France, because France, with quite unecological thoughts in mind, hopes to gain advantages in the European car market and would probably be willing even to put up with Greenpeace impudence if it served that purpose? Still, the lessons of politics are different from those of morality. Precisely in the alliance between mutually exclusive beliefs - from Chancellor Kohl to Greenpeace activists, from Porsche fetishists to throwers of incendiary devices – the new quality of the political is beginning to show.

For the economy, too, there has been a radical change in the situation. Shell, for example, did everything from its point of view to control the problem. An agreement had been reached with government, experts and managers to go for dumping at sea, and that was the optimal solution for Shell itself. But when they tried to implement it, the exact opposite happened: the markets threatened to collapse. So the lesson is: there are no expert solutions in risk discourse, because experts can only supply factual information and are never able to assess which solutions are culturally acceptable.

This too is new. Politics and morality are gaining priority over expert reasoning. Whether such politicization can go beyond single issues to constitute an authoritative environmental politics, is quite another matter. Here, probably, are the limits of global subpolitics, which should not be confused with the policy of national governments. On the other hand, the process of subpoliticization should not at all be considered as irrational, because it has all the marks of republican modernity in contrast to the representative, national-parliamentary democracy of parties. The activity of world corporations and national governments is becoming subject to the pressure of a world public sphere. In this process, individual-collective participation in global action networks is striking and decisive; citizens are discovering that the act of purchase can be a direct ballot which they can always use in a political way. Through the boycott, an active consumer society thus combines and allies with direct democracy – at a world level.

This is coming close, in an exemplary manner, to what Kant outlined exactly 200 years ago in his 'Perpetual Peace' essay as the utopia of a cosmopolitan society, as opposed to what he called the 'despotism' of representative democracy. It would be a global nexus of responsibility, in which individuals — and not only their organizational representatives — could directly participate in political decisions. This allows us to grasp at once what is currently discussed in the USA as 'technological citizenship': namely, the recovery of basic democratic rights against the 'no-man's-rule' of technological developments.

In his book Autonomous Technology, Langdon Winner (1992) draws the conclusion that most social science analysis of technological development fails to recognize the difference between 'technology requires legislation' and 'technology is legislation'. Lewis Mumford, more than 30 years ago, wrote that large-scale technological systems are the most influential forms and sources of tyranny in the modern world. And in the recent view of Andrew Zimmerman (1995: 88), social autonomy is being hollowed out by technological autonomy; whereas in the first modernity, the well-being and 'freedom' of the citizen were a function of the well-being and freedom of technical systems. The contrasting approach of Philip Frankenfeld seeks to justify the demand for technological participation:

The status of technological citizenship may be enjoyed at the national, state, local, or global level or at levels in between. Hence one can be a technological citizen of . . . the Chernobyl ecosphere, of the plastic explosives production and use 'noosphere' – which is global in scale – of a particular nuclear-free zone in the noncontiguous network of them, of the realm covered by the non-proliferation treaty. . . . However, one would be a technological citizen of any of these spheres of impact if their inhabitants deigned to create a set of agencies, a cocoon of protections or benefits, or a cocoon of rights and responsibilities granting subjects status in relation to impacts of technologies with a specific overarching purpose. (Frankenfeld, 1992: 463f., quoted in Zimmerman 1995: 89; see also van Steenbergen, 1994; Archibuggi and Held, 1995).

As normatively overarching goals of citizenship, Frankenfeld names: '(1) autonomy, (2) dignity, (3) assimilation – versus alienation – of members of the polity'. It therefore includes: '1. rights to knowledge or information; 2. rights to participation; 3. rights to guarantees of informed consent; and 4.

rights to limitation on the total amount of endangerment of collectivities and individuals' (Frankenfeld, 1992: 462, 465).

The directness of global technological participation is established, for example, in the *unity of the acts of purchase and casting a ballot*. Here there are no organizational intermediaries, no representative agencies of the popular will, no bureaucracy, no electoral registration, no shopping police, no water cannons, no application forms to hold a demonstration! It is a direct, anarchistic form of politics and protest, here, now and everywhere, which often costs nothing and can, so to speak, be incorporated into the menu. Politics can thus become an integral part of everyday activity, and at the same time involve active integration into the (post-traditional) cosmopolitan (non-)order.

But what are the sites, the instruments and the media of this direct politics of 'global technological citizenship'? The political site of the world risk society is not the street but *television*. Its political subject is not the working class and its organization, not the trade union. Instead *cultural symbols are staged in the mass media*, where the accumulated bad conscience of the actors and consumers of industrial society can be offloaded. There are three ways of illustrating this appreciation.

First, in the abstract omnipresence of dangers, destruction and protest are symbolically mediated. Second, in acting against ecological destruction, everyone is also their own enemy. Third, the ecological crisis is breeding a cultural Red Cross consciousness. Those, like Greenpeace, who inscribe this on their banner are raised to the ecological nobility and given a blank cheque for an almost unlimited store of trust – which has the advantage that, in cases where there is doubt, one's own information and not that of industrial agencies is believed.

Here lies a crucial limitation of direct politics. Man is a child lost in a 'forest of symbols' (Baudelaire). In other words, he has to rely on the symbolic politics of the media. This is true especially in the abstractness and omnipresence of destruction that keep the world risk society going. Tangible, simplifying symbols, in which cultural nerve fibres are touched and alarmed, here acquire a key political significance. These symbols must be produced or concocted, in the open fire of conflict provocation, before the strained-terrified television eyes of the public. The decisive question is: who discovers (or invents), and how, symbols that disclose or demonstrate the structural character of the problems as well as creating the capacity for action? This capacity should be all the greater, the simpler and neater is the staged symbol, the fewer are the individual costs of public protest actions, and the more easily each person can thereby clear his or her conscience.

Simplicity means a lot. First, transmissibility. We are all environmental sinners; just as Shell wanted to dump its oil rig in the sea, so do 'all' our fingers itch to toss cans of coke out of the car window. This is the everyman situation which makes the Shell case (according to the social construction) so 'transparent'. Yet there is an essential difference, in that the likelihood of official acquittal becomes more tempting with the size of the sin. Second, moral outrage. 'Those at the top' get the approval of government and experts

to dump in the Atlantic an oil rig filled with toxic waste, yet 'we down below' have to save the world by dividing every teabag into three – paper, string and leaves – and disposing of them separately. Third, political expediency. Will Kohl also support Greenpeace in its actions against French nuclear tests and call on Chirac to suspend them? Hardly. For that is a question of national power-poker and not just of Shell's market interests. Fourth, simple alternative actions. To hit at Shell, one could and would have to fill up with 'morally clean' petrol from one of its competitors. If governments throughout the world lead the boycott of French goods, then of course everything takes on a new dimension. Fifth, selling of ecological indulgences. The boycott gains importance from the bad conscience of industrial society, because it allows a kind of personally directed ego te absolvo to be granted at no cost to oneself.

Global ecological dangers, far from intensifying a general lack of meaning in the modern world, create a meaning-filled horizon of avoidance, protection and assistance, a moral climate that grows sharper with the scale of the perceived danger, and in which a new political significance attaches to the roles of hero and villain. If the world is perceived within the co-ordinates of ecological-industrial self-endangerment, then a universal drama can be made out of morality, religion, fundamentalism, desperation, tragedy and tragi-comedy – always intertwined with their opposites: salvation, assistance, liberation. In this world tragi-comedy, the economy is free either to take the role of poison-stirrer or to slip into the part of hero and helper. This is the background against which Greenpeace, using the ruse of impotence, manages to occupy the stage. What it practises is a kind of *judo politics*, designed to mobilize the superior strength of environmental sinners against themselves.

The Greenpeace people are multinational media professionals; they know how cases of contradictory promulgation and violation of the norms of safety and inspection need to be presented so that the great and powerful (corporations, governments) walk right into it and wriggle telegenically for the enjoyment of the world's public. Thoreau and Gandhi would have beamed with delight to see Greenpeace using the methods of the media age to stage world-wide civil resistance. Greenpeace is also a smithy turning out political symbols. The artificial means of the Black-White conflict are used to forge cultural sins and sin-symbols which, in binding protests together, may become lightning conductors of the collective guilty conscience. Such are the ways in which new certainties and new outlets for rage are constructed in the enemyless democracy that has succeeded the enemy-images of the East-West conflict. This process is and remains part of the world fairground of symbolic politics. Anyway, how does it change the state of the world if the oil rig is disposed of on land? Or if the French nuclear tests do not take place after all? Is it not all an absurd distraction from the central challenges of the world risk society?

Yet if we focus not on single issues but on the new political constellation, then the incentive for a sense of success is clear enough. In the playful confluence of opposites in transcultural civil resistance, cosmopolitan society feels its direct power. It is well known that nothing is as infectious as success. Those who would like to get on the right trail soon discover that mass sport and politics here directly fuse with each other on a world scale. It is a kind of political boxing match with active audience participation, all around the world, lasting four week-rounds until the French President Chirac and his 'Grande Nation' are knocked out. No normal TV entertainment could compete with that; it would lack not only the extra kick of reality, but also the modern ecological aura of world salvation which in the end has nothing opposing it. At any event, it is clear from *this* case study that the widespread talk of the end of politics and democracy, or the collapse of all values – in short, the whole canon of cultural criticism – is foolish because it is so historically blind. People have only to get a taste of direct participation with 'tangible' success – and they're up and away.

As awareness of the dangers spreads, the world risk society becomes self-critical. Its bases, co-ordinates and pre-stamped coalitions are thrown into a state of turbulence. Politics breaks out in a new and different way, beyond the reach of formal responsibilities and hierarchies. So, we are looking for politics in the wrong place, with the wrong concepts, on the wrong floors, on the wrong pages of the daily newspapers. The very areas of decision-making that the model of industrial capitalism places in the slip-stream of politics – advertising, economics, administration, consumption, science, private life – are swept by reflexive risk-modernity into the storms of political argument. If you want to understand why, you must look at the cultural-political meaning of manufactured dangers.

Danger, too, is alienated, concentrated subjectivity and history. It is a kind of obsessional collective memory of the fact that our decisions and mistakes lie hidden in what we now find ourselves facing. Global threats are the embodiment of the errors of a whole epoch of industrialism; they are a kind of collective return of the repressed. In their conscious investigation lies perhaps a chance of breaking the spell of industrial fatalism. If someone wanted to build a machine to do away with machines, they would have to use the plan of ecological self-endangerment. It is the reification that cries out to be overcome. This is the admittedly tiny chance for global subpolitics in the world risk society.

If the need for a world environmental politics from above is also included, then it is clearly still possible to conceive within an active perspective the vacuum that Europe and the world became after the end of the East–West conflict. Our fate is that we have to invent the political anew.

#### Notes

1. See the historical-theoretical account of the basic conceptions of nature and the concept of 'nature after the end of nature', in Böhme (1991); a culture-theory approach to the (perhaps at once universal and subculturally specific) images of nature among environmental activists, industrial managers, etc., in Schwarz and Thompson (1990); and on the general images of nature in modern society, Hitzler (1991) and van den Daele (1992).

2. This is bringing to an end a long period in which sociology – in strict accordance with its founding division of labour with the natural sciences – could abstract from 'nature' as the other, the environment, the already given. This disregarding of nature fully corresponded to a certain relationship to it. Comte said as much without disguising it. He explicitly wanted the relationship of national conquest to be replaced with one of natural conquest by the rising bourgeois-industrial society, so that the teeth of intra-social conflicts would be drawn. (Right up to the present day this theme has lost none of its significance.) Abstraction from nature thus presupposes domination over nature.

In this way, the 'process of consuming nature' – which is how Marx understood the labour and production process – could be driven onward. When people talk today of 'ecological citizenship', arguing that basic rights must be extended to animals, plants and so on, they are precisely expressing the break-up of this subordination-abstraction relationship into its polar opposite.

- 3. Margit Eichler has reported a little reading-experiment that she conducted as a sociologist, in order to track the social content of environmental questions. After a whole semester of systematically reading and analysing the *Globe and Mail* and a number of other papers, she noted that they were awash with largely natural-scientific reports of various dangers. Their general picture was of a world deep in a huge ecological crisis. 'I concluded that we, as an insider-community of scientists, wilfully construct barriers to knowledge that appears too terrifying or overwhelming and places too many demands on us to rethink not only our private life but also our professional activity' (Eichler, 1993: 372).
- 4. It is, moreover, difficult to square the claims of cultural theory to transhistorical context-independence with its interest in contextual precision, relativity and cultural construction. In which context-culture does this almost unthinking universalism originate? It is hard to give an answer without making some reference to Eurocentrism.
- 5. Anthony Tucker (1996: 12) writes: 'The world had much to learn from the meltdown of its most notorious nuclear reactor. Ten years on, poor organization, underfunding and political expediency have combined to hide the real horrors of Chernobyl. But at last the truth is beginning to emerge. . . . The lives and livelihoods of around 10 million people have already been affected by the disaster. Half a million people have been displaced. Predictably, the abandoned villages and forests of the 30-kilometre exclusion zone around Chernobyl have become the wild, sinister no-go haunt of criminal and bandit communities. But in Belarus, in the Russian Federation and in the Ukraine, where weather-determined fallout was greatest, agriculture is corrupted by contamination, there is massive social and industrial dislocation, and humanitarian, health and economic problems are of such immensity and complexity that they are far beyond available resources. These are conditions that are perhaps comparable only to the aftermath of civil war.'
- 6. 'In the 1970s local claims were made by ordinary people living near the Sell-afield nuclear reprocessing complex, that excess childhood leukemias were occurring in that area. . . . The issue came to the attention of TV researchers, and a national documentary programme was eventually broadcast in 1983.' In the end, however, the excess cancers around Sellafield 'were almost routinely referred to as having been *discovered* by the Black Committee' (Wynne, 1966a: 49).
- 7. Latour's book We Have Never Been Modern (1993) is, however, one of the most outstanding and challenging to have appeared for years on the sociology of technology.

26

reflexive practices should in large part be oriented towards constructing the social

problem' (Hajer, 1996: 280, 287; see also Bonss, 1995).

9. In a review of my book *Die Erfindung des Politischen* (1993/1996), Wolfgang van den Daele (1995) has also taken issue with this key criterion. He writes: 'It is true that in many cases [the model: the operating authority of a nuclear power station], liability for all the consequences of a technological disaster will exceed the capacity of the private-sector insurance system. However, in individual cover for such accidents or other new threats, there are no discernible limits to private insurance. Even for someone living next to a nuclear power station or a chemicals plant, life assurance will be offered for sale.' This is an interesting mistake. For in fact the opposite is the case: individuals in the vicinity of nuclear power stations have considerable difficulty in taking out life assurance.

Van den Daele continues: 'If, as a result of climate change, storm damage dramatically increases in our part of the world, the premiums will rise to the level that today applies to regions often ravaged by whirlwinds or earthquakes.' This has now increased so much that whole regions are becoming 'no-insurance' areas, and insurance companies are facing crises everywhere in the world. 'Furthermore,' he writes, 'limits of insurability are not simply the sociological correlate of increasing objective risk. They also derive from change in risk inclusion.' Obviously! Because: 'The consequences of an oil-tanker disaster exceed the limits of insurability, once coastal cleaning, seabird deaths and tourism losses can be counted as damage for which the shipping company has liability. The actual effects (apart from liability) are not, however, greater than they used to be when they went down as a disaster to be borne by those affected or by the community at large. Meanwhile, in some states of the USA, midwifery risks are "beyond insurability" because the courts award arbitrarily high compensation in cases involving professional error. Unlimited risk cover for unknown dangers, regardless of blame, would mean uninsurability for many classes of action. That such liability is demanded for the introduction of new technology (in genetic engineering, for example) says more about the degree of political rejection of technology than about its objective risk potential.' This is a distinction that I cannot share; both attitudes are part of what I called above a 'realistconstructivist' view.

Van den Daele draws the following conclusion. 'Limits of insurability are not an unambiguous indicator; it does not distinguish whether the risk has become greater or the risk perception sharper. That may be all the same politically, insofar as both factors produce an awareness of living in a risk-filled world. Sociologically, however, important questions are bound up with this distinction. Why does the virulence of certain risks and uncertainties differ from country to country? Why is Germany visibly advancing along the road to the "risk society", whereas most atomic

power stations in France are turned on and most genetically engineered organisms in the United States are being set loose? What role is played by a country's history and legal system, the porousness of its political decision-making hierarchy, and so on?' I too consider these questions important. They do not constitute objections, however, but are points of view indicating that 'further research is necessary'. Characteristically, van den Daele's whole argument is within the framework of a national risk society; the dynamic of global threats in a world risk society does not figure at all in what he writes. See Section 5 below.

- 10. An example of these new negotiation-constraints is the open-ended 'motor-car consensus' reached between industrialists and politicians in the summer of 1995: 'With a wide palette of special measures of their own plus promises of political support, the motor producers Volkswagen, BMW, Mercedes-Benz and Porsche are making sure that Germany remains the production site for cars. In a paper issued jointly with the "native lands" of Lower Saxony, Bavaria and Baden-Württemberg, they committed themselves to further improvements in production, especially as far as environmental interests are concerned. They also set themselves the goal of stable employment conditions. The condition is the setting of a clear political framework, with no additional tax or social-wage burdens, and no general speed limits for drivers. Three-litre cars should be on the market by the year 2000 at the latest' (Frankfurter Allgemeine Zeitung, 12 August 1995).
- 11. Ernst Ulrich von Weizsäcker has pointed out that there have in the past also been armed conflicts over natural resources, but that today and in the future these will centre on wider and even global goods and challenges: 'For some years now, there have been regular reports in the Argentinean and Chilean press about the Antarctic ozone hole, mainly caused by the industrial North, which has become an acute threat to people and animals in the tip of South America. Since the Second Conference on World Climate, held in Geneva in 1990, low-lying island states have established their own diplomatic group (AOSIS) which, fearing the enhanced greenhouse effect, has protested against the possibility of a sudden and uncontrollable rise in the sea-level. Over-fishing of the oceans, especially by Japanese and Russian vessels, has brought into action not only environmental activists but also many of the countries dependent upon small-scale fishing. And already in the run-up to the Rio "earth summit" of June 1992, the whole debate over protection of the tropical forests with ideas such as a boycott of tropical wood caused sharp diplomatic tension between industrialized countries and tropical countries rich in forest.

'No end is in sight to these new-style ecological conflicts. With the growing threat to the world climate, species diversity, ozone protection and water resources (including the oceans), and with the ever-rising population density, those most affected are becoming increasingly on edge. The issues in the new ecological conflicts are thus general environmental goods, and not so much natural resources belonging to the sovereign territory of individual states. International law has long been in difficulty over these general goods. It cannot be excluded that tensions over these ecological disputes will grow to such an extent that a major war – even a Third World War – could be unleashed' (1995: 57).

#### Bibliography

Adam, B. (1995) *Timewatch: The Social Analysis of Time*. Cambridge: Polity. Adam, B. (1996) 'Re-Vision: The Centrality of Time for an Ecological Social Science Perspective', pp. 84–137 in S. Lash, B. Szerszynski and B. Wynne (eds) *Risk* 

Environment and Modernity: Towards a New Ecology. London: Sage.

Archibuggi, D. and D. Held (eds) (1995) Cosmopolitan Democracy. Cambridge: Polity.

Barber, B. (1984) Strong Democracy. Berkeley: University of California Press.

Beck, U. (1991) 'Die Soziologie und die ökologische Frage', Berliner Journal für Soziologie 3: 331–41; English version in U. Beck (1994) Ecological Enlightenment. New York: Humanities Press.

Beck, U. (1992a) Risk Society: Towards a New Modernity. London: Sage; orig. (1986) Risikogesellschaft: Auf dem Weg in eine andere Moderne. Frankfurt am Main: Suhrkamp.

Beck, U. (1992b) 'From Industrial to Risk Society', *Theory, Culture & Society* 9: 97–123.

Beck, U. (1994) Ecological Enlightenment. New York: Humanities; orig. (1991) Politik in der Risikogesellschaft. Frankfurt am Main: Suhrkamp.

Beck, U. (1995) Ecological Politics in an Age of Risk, trans. A. Weisz. Cambridge: Polity; orig. (1988) Gegengifte – Die organisierte Unverantwortlichkeit. Frankfurt am Main: Suhrkamp.

Beck, U. (1996) The Reinvention of Politics. Cambridge: Polity; orig. (1993) Die Erfindung des Politischen. Frankfurt am Main: Suhrkamp.

Beck, U., A. Giddens, and S. Lash (1994) Reflexive Modernization: Politics, Tradition and Aesthetics in the Modern Social Order. Cambridge: Polity.

Becker, E. (1990) 'Transformation und kulturelle Hülle', Prokla 79.

Benn, G. (1986) Das Gottfried Benn Brevier. Munich.

Bogun, R. and G. Warzewa (1992) 'Grossindustrie und ökologische Probleme in der Region – Wie reagieren Industriearbeiter?', Soziale Welt 43: 237–45.

Böhme, G. (1991) 'Die Natur im Zeitalter ihrer technischen Reproduzierbarkeit', in Die Natur im Zeitalter ihrer technischen Reproduzierbarkeit. Frankfurt am Main: Suhrkamp.

Bonss, W. (1991) 'Unsicherheit und Gesellschaft – Argumente für eine soziologische Risikoforschung', Soziale Welt 42: 258–77.

Bonss, W. (1995) Vom Risiko. Unsicherheit und Ungewissheit in der Moderne. Hamburg: Bund.

Brand, K.-W. and A. Poferl (1996) Ökologische Kommunikation in Deutschland. Opladen: Westdeutscher Verlag.

Bühl, W. (1981) Ökologische Knappheit – Gesellschaftliche und technologische Bedingungen ihrer Bewältigung. Göttingen: Vanderhoeck & Ruprecht.

Claus, F. and P. Wiedermann (1994) *Umweltkonflikte*. Taunusstein: Biedermann.

de Haan G. (ed.) (1995) Umweltbewusstsein und Massenmedien. Perspektiven ökologischer Kommunikation. Berlin: Akademie Verlag.

Doubiago, S. (1989) 'Mama Coyote Talks to the Boys', pp. 40–4 in Judith Plant (ed.) *Healing the Wounds: The Promise of Ecofeminism.* Philadelphia: Green Print.

Douglas, M. (1992) Risk and Blame: Essays in Cultural Theory. London: Routledge. Douglas, M. and A. Wildavsky (1982) Risk and Culture. Berkeley; University of California Press.

Dunlop, R.E. and W.Z. Cotton Jr (1994) 'Toward an Ecological Sociology: The Development, Current Status, and Probable Future of Environmental Sociology', pp. 11–31 in W.V. Antonio, M. Sasaki and Y. Yonebayashi (eds) *Ecology, Society and the Quality of Social Life*. New Brunswick/London:.

Eder, K. (1988) Die Vergesellschaftung der Natur – Studien zur sozialen Evolution der praktischen Vernunft. Frankfurt am Main: Suhrkamp.

Eichler, M. (1993) ' "Umwelt" als soziologisches Problem', Das Argument 205: 359-76.

Elliott, B. (1992), 'Sociology and the Environment: New Directions in Theory and Research', paper delivered at the Canadian Sociology and Anthropology Association, May/June (unpublished manuscript).

Ewald, F. (1991) 'Die Versicherungsgesellschaft', pp. 288–301 in U. Beck (ed.) *Politik in der Risikogesellschaft*. Frankfurt am Main: Suhrkamp.

Falk, R. (1994) 'The Making of Global Citizenship', pp. 127–40 in B. van Steenbergen *The Conditions of Citizenship*. London: Sage.

Frankenfeld, P.J. (1992) 'Technological Citizenship', Science, Technology and Human Values 17: 459–84.

Görg, C. (1992) Neue soziale Bewegungen und kritische Theorien. Wiesbaden: Belz.

Hajer, M. (1996) The Politics of Environmental Discourse. Ecological Modernization and the Policy Process. Oxford: Clarendon Press.

Halfmann, J. and K.P. Japp (eds) (1990) Riskante Entscheidungen und Katastrophenpotentiale – Elemente einer soziologischen Risikoforschung. Opladen: Westdeutscher Verlag.

Haraway, D. (1991) Simians, Cyborgs and Women: The Reinvention of Nature. London: Free Association Books.

Heine, H. and R. Mautz (1989) Industriearbeiter contra Umweltschutz? Frankfurt/New York: Campus.

Hildebrandt, et al. (1994) 'Politisierung und Entgrenzung – Am Beispiel ökologisch erweiterter Arbeitspolitik', *Soziale Welt*, Special Issue 9.

Hitzler, R. (1991) 'Zur gesellschaftlichen Konstruktion von Natur', Wechsel Wirkung 50: 58–75.

Hobbes, T. (1968) Leviathan. Harmondsworth: Penguin.

Horlick-Jones, T. (1995) 'Urban Disasters and Megacities in a Risk Society', *Geo Journal* 37(3): 329–34.

Horlick-Jones, T. (1996) 'Modern Disasters as Outrage and Betrayal', *International Journal of Mass Emergencies and Disasters* (in press).

Jahn, T. (1990) 'Das Problemverständniss sozial-ökologischer Forschung. Umrisse einer kritischen Theorie gesellschaflicher Naturverhältnisse', *Jahrbuch für sozial-ökologische Forschung* 1: 15–41.

Kant, I. (1994) 'Zum ewigen Frieden. Ein philosophischer Entwerf', pp. 195–251 in I. Kant Werke in Zwölf Bänden, Band XI. Frankfurt a.M.: Suhrkamp.

King, Y. (1989) 'The Ecology of Feminism and the Feminism of Ecology', pp. 18–28 in Judith Plant (ed.) *Healing the Wounds: The Promise of Ecofeminism*. Philadelphia: Green Print.

Laird, F.N. (1993) 'Participatory Analysis, Democracy and Technological Decision-Making', *Science, Technology and Human Values* 18: 341–61.

Lash, S. and J. Urry (1994) Economics of Signs and Space. London: Sage.

Lash, S., B. Szerszynski and B. Wynne (eds) (1996) Risk, Environment and Modernity: Towards a New Ecology. London: Sage.

Latour, B. (1991) 'Technology Is Society Made Durable', pp. 103–31 in J. Law (ed.) A Sociology of Monsters: Essays on Power, Technology and Domination. London: Routledge.

Latour, B. (1993) We Have Never Been Modern. London: Harvester.

Lau, C. (1989) 'Risikodiskurse', Soziale Welt 3: 271-92.

Liberatoire, A. (1994) 'Facing Global Warming: The Interaction between Science and Policy-Making in the European Community', in M. Redcliff and T. Benton (eds) Social Theory and the Global Environment. London: Routledge.

Luhmann, N. (1986) Ökologische Kommunikation – Kann die moderne Gesellschaft sich auf ökologische Gefährdungen einstellen? Opladen: Westdeutscher Verlag.

Luhmann, N. (1991) Die Soziologie des Risikos. Berlin: De Gruyter.

Metzner, A. (1994) 'Offenheit und Geschlossenheit in der Ökologie der Gesellschaft', in F. Beckenbach and H. Diefenbacher (eds) Zwischen Entropie und Selbstorganisation: Perspektiven einer ökologischen Ökonomie. Marburg: Universitätsverlag.

Moscovici, S. (1976) Society against Nature. The Emergence of Human Societies. Hassocks: Harvester.

Nelkin, D. (ed.) (1992) Controversy: Politics of Technical Decisions, 3rd edn. London: Sage.

Oechsle, M. (1988) Der ökologische Naturalismus. Frankfurt am Main: Suhrkamp. Osterland, M. (1994) 'Der "grüne" Industriearbeiter – Arbeitsbewusstsein als Risikobewusstsein', Soziale Welt, Special Issue 9.

Perrow, C. (1988) 'Komplexiät, Kopplung und Katastrophe', in *Normale Katastrophen – Die unvermeidbaren Risiken der Grosstechnik*. Frankfurt am Main: Campus.

Plant, C. and J. Plant (eds) (1991) Green Business: Hope or Hoax? Philadelphia: Green Print.

Rammert, W. (1993) 'Wer oder was steuert den technischen Fortschritt', pp. 151–76 in *Technik aus soziologischer Perspektive*. Opladen: Westdeutscher Verlag.

Redcliff, M. and T. Benton (eds) (1994) Social Theory and the Global Environment. London: Routledge.

Reusswig, F. (1994) 'Lebensstile und Ökologie', Sozialökologische Arbeitspapiere 43. Frankfurt am Main: Institut für Sozialökologische Forschung.

Rip, A. (1985) 'Experts in Public Arenas', in H. Otway and M. Peku (eds) Regulating Industrial Risks: Science, Hazards and Public Protection. London: Butterworth.

Rosenmar, L. (1989) 'Soziologie und Natur', Soziale Welt 40: 12-28.

Scharping, M. and C. Görg (1994) 'Natur in der Soziologie', in C. Görg and M. Scharping (eds) *Gesellschaft im Übergang*. Darmstadt: Wiss. Buchgesellschaft.

Schwarz, M. and M. Thompson (1990) Divided We Stand: Redefining Politics, Technology and Social Choice. New York: Harvester/Wheatsheaf.

Senghaas-Knobloch, E. (1992) 'Industriezivilisatorische Risiken als Herausforderung für die Friedens- und Konfliktforschung', in H. Meyer and P. Wellmann (eds) *Umweltzerstörung: Kriegsfolge und Kriegsursache*. Frankfurt am Main: Suhrkamp.

Shiva, V. (1988) Staying Alive. Women, Ecology and Development. London: Zed Press. Shiva, V. (1991) Ecology and the Politics of Survival. Conflicts over Natural Resources in India. London/New Delhi: Sage.

Sontheimer, S. (1991) Women and the Environment: A Reader. Crisis and Development in the Third World. London: Earthscan.

Spretnak, C. (1989) 'Towards an Ecofeminist Spirituality', pp. 127–32 in Judith Plant (ed.) *Healing the Wounds: The Promise of Ecofeminism*. Philadelphia: Green Print.

Spretnak, C. (1990) 'Ecofeminism: Our Roots and Flowering', pp. 3–14 in I. Diamond and G.F. Orenstein (eds) Reweaving the World. The Emergence of Ecofeminism. San Francisco.

Stovic, P. (1993) 'Perceived Risk, Trust and Democracy', Risk Analysis 13(6): 675–82.

Symposium on 'Sociology of the Environment' (1994) in American Sociologist 25 (Spring).

Szerszynski, B., S. Lash and B. Wynne (1996) 'Ecologies, Realism and the Social Sciences', pp. 1–26. in S. Lash, B. Szerszynski and B. Wynne (eds) *Risk, Environment and Modernity: Towards a New Ecology*. London: Sage.

Tucker, A. (1996) 'The Fallout from the Fallout', The Guardian Weekend, 17 February: 12–16.

van den Daele, W. (1992) 'Concepts of Nature in Modern Societies', in M. Dierkes and B. Biervert (eds) *European Social Science in Transition*. Frankfurt am Main: Campus. van den Daele, W. (1995) 'Politik in der ökologischen Krise', *Soziologische Revue* 18(3): 501–8.

van Steenbergen, B. (1994) The Conditions of Citizenship. London: Sage.

von Weizsäcker, U. (1995) 'Hätte ein Dritter Weltkrieg ökologische Ursachen?' Der Bürger im Staat 45(1): 57–8.

Wehling, P. (1989) 'Ökologische Orientierung in der Soziologie', Sozial-ökologische Arbeitspapiere 26. Frankfurt am Main: Institut für Sozialökologische Forschung.

Welsh, I. (1995) 'Risk, Reflexivity and the Globalization of Environmental Politics', Centre for Social and Economic Research Publications, Working Paper No. 1, Bristol BS16 1QY.

Winner, L. (1986) 'Do Artifacts Have Politics?', pp. 19–39 in *The Whale and the Reactor: A Search for Limits in an Age of High Technology*. Chicago: University of Chicago Press.

Winner, L. (1992) 'Citizen Virtues in a Technological Order', *Inquiry* 35(3–4).

Winner, L. (1992) Autonomous Technology. London: Sage.

World Commission on Environment and Development (1987) Our Common Future. Oxford: Oxford University Press.

Wynne, B. (1991) 'Knowledges in Context', Science, Technology and Human Values 16(1): 111–21.

Wynne, B. (1992) 'Misunderstood Misunderstandings: Social Identities and Public Uptake of Science', *Public Understanding of Science* 1: 281–304.

Wynne, B. (1996a) 'May the Sheep Safely Graze?' pp. 44–83 in S. Lash, B. Szerszynski and B. Wynne (ed.) Risk, Environment and Modernity: Towards a New Ecology. London: Sage.

Wynne, B. (1996b) 'The Identity Parades of SSK: Reflexivity, Engagement and Politics', Social Studies of Science 26 (forthcoming).

Yearley, S. (1994) 'Social Movements and Environmental Change', in M. Redcliff and T. Benton (eds) *Social Theory and the Global Environment*. London: Routledge.

#### 32 Theory, Culture & Society

Zimmerman, A.D. (1995) 'Towards a More Democratic Ethic of Technological Governance', Science, Technology and Human Values 20(1): 86–107.

Zürn, M. (1995) 'Globale Gefährdungen und internationale Kooperation', Der Bürger im Staat 45(1): 49-56.

**Ulrich Beck** is Professor of Sociology at the University of Munich. His publications include *Risk Society* (London: Sage, 1992); *Ecological Politics in an Age of Risk* (Cambridge: Polity Press, 1995); *Reflexive Modernization* (with Anthony Giddens and Scott Lash, Cambridge: Polity Press, 1994); and *The Normal Chaos of Love* (Cambridge: Polity Press, 1994).