Environment & Society

White Horse Press

Full citation: Lynch, Tony and David Wells, "Insuring the Future." *Environmental Values* 10, no. 4, (2001): 507-521. http://www.environmentandsociety.org/node/5841

Insuring the Future

TONY LYNCH

Department of Philosophy
School of Social Science
University of New England
Armidale, 2350, New South Wales, Australia
Email: alynch@metz.une.edu.au

DAVID WELLS

Department of Politics
School of Social Science
University of New England
Armidale, 2350, New South Wales, Australia
Email: dwells@metz.une.edu.au

ABSTRACT

Environmental politics needs more than piecemeal institutional efforts and more than calls for a set of 'new' values. It needs a realistic, comprehensive, and effective policy programme. Such a programme can be derived from a conjunction of Hardin's work on the 'tragedy of the commons' and Beck's analysis of the 'risk society', and involves exploiting the possibilities for the internalisation of risk provided by the insurance and reinsurance industries. Such exploitation requires tailored changes to the politico-legal environment, enforcing strict liability for the production of risk, permitting any and all agents adversely effected by such negative externalities to initiate action for damages. The aim is not to clog up social and economic life with endless legal disputation, but through such a threat to ensure that environmentally significant investment and productive strategies are actively constrained by actuarially calculated strategies for risk internalisation.

KEY WORDS

Externalities, insurance, risk, liability

Environmental Values **10** (2001): 507–21

TONY LYNCH AND DAVID WELLS

INTRODUCTION

Too often environmentalists' approaches to the problems of environmental management and resource security oscillate uneasily between a broadly academic approach characterised by a broad-brush ethicisism, in which the call is for a 'new ecological ethic' according to which humanity does not stand alone but in some kind of moral equality with the natural world, and a practical policy approach which sees attention focused on particular management problems. While each approach has its place, as a contribution to environmental politics conceived as a political movement the results are regrettable. For advocates of the first approach the battleground is misidentified, and effort is displaced into the abstractions of moral philosophy rather than the exigencies of practice; while the narrowness of the latter approach means that an otherwise admirable practical orientation too often loses itself in an endless series of local details, minutiae and trivialities, which together obscure the possibilities of an intellectually secure and practically sophisticated environmental politics.

Environmentalism needs such a secure and sophisticated politics, and it can be found in a critical conjunction between the work of Garrett Hardin and Ulrich Beck. In this essay we make that critical conjunction.

We begin with Hardin, for his pioneering work aims to offer environmentalism a practical and integrated framework for intelligent institutional design and reform.[1] We argue that while Hardin's analysis in terms of the 'tragedy of the commons' provides a good beginning point, it is inadequate to the extent that he fails to appreciate the importance of *risk pooling* or *insurance* in managing environmental and resource commons. This failure leads him to misrepresent such commons in history, and to offer an inadequate, because overly individualistic, conception of privatisation as a solution; or, in cases where privatisation is impracticable, an authoritarian centralism with which to discipline the potentially disruptive individual.

Our revision of Hardin enables environmentalism to key itself directly into contemporary economic reality in, potentially, an extremely fruitful way. For if there is one sector of the modern economy which is both aware of our major environmental hazards, and is to a significant degree already committed to working for the alleviation of such hazards, it is the insurance (and re-insurance) industry. To cite just one instance, there is the recent 1996 decision of some sixty of the world's largest insurance companies to sign a statement urging the governments of the world to ensure reduced greenhouse gas emissions. Insurance payouts generated by the costs of natural disasters has risen to levels that the companies find increasingly unsustainable on purely commercial grounds. In 1996, damage from weather-related disasters reached a record 60 billion US. Dollars, a record broken in each successive year. Indeed, according to Munich Re, one of the biggest reinsurance companies in the world,

> Comparing the figures for the 1960s and the past ten years [1988-1998], we have established that the number of great natural catastrophes was three times larger. The cost to the world's economies, after adjusting for inflation, is nine times higher and for the insurance industry three times as much.[2]

Forging a link between this, the central risk-management sector of the global economy, and environmental analysis is certainly a worthy contribution. And we mean the linkage to go *both* ways: for if environmentalism needs institutions that provide effective risk management, so too those institutions themselves, as the above example indicates, need all the support they can get to counter capitalism's perennial tendency to encourage cost-externalising strategies. The linkage promises to be especially forceful in that it involves an extension of market relations, not their retraction, as we use the insurance market to internalise the environmental costs of economic production and consumption.

This revision of Hardin's account will enable us to see the novelty of the political challenge we face today, in opposition to those traditional styles of environmental management recommended by theorists like Elinor Ostrom and Margaret McKean as they exhort us to look at the Spanish *Heurta's*, or Philippine irrigation systems, or the management of *Iraichi* in Japan.[3] For unlike the situation with traditional resource communities, in which one can hope that stakeholders' enlightened self-interest provides sufficient motive for constituting and sustaining effective schemes for risk internalisation, the effective management of modern resource-using communities typically presupposes that stakeholders be held accountable by 'outsiders' for failures to internalise risk. It is here that politics enters the picture in a way it does not in traditional communities, and it is here that we begin to make our connection between Hardin's analysis and Ulrich Beck's theory of the 'risk society'.[4]

HARDIN'S 'TRAGEDY OF THE COMMONS'

Hardin's presentation of the 'tragedy of the commons' is so familiar we shall content ourselves with a very brief account before offering what we take to be the real lesson of his analysis.

Hardin casts his analysis in the form of an historical parable. We are told to imagine a traditional herding community faced with an open access and finite pastoral commons. Each herder is assumed to be rationally self-interested. The tragedy arises as each herder seeks to place additional beasts on the pasture – for the benefits of such placement accrue to the owner while the costs are spread across the community – and each neglects the possibilities of pasture improvement for the inverse reason that such benefits would accrue to all while the individual bears the full costs of implementation. Inevitably then the pasture collapses in a collective disaster generated by individual herders rationally self-

interested actions. And this, Hardin insists, can be offered as capturing the logic of all (at least, all the most important) environmental problems we face, from pollution, to over-population, to resource spoilage and destruction.

How should we understand this parable? Is it a tale of the bitter fruits of immorality and/or endemic 'short-termism', as so many who first encounter it are prone to think? The answer surely is that it is not. Take the charge of 'short-termism'. Of course the actions of the herders will forseeably result in collective disaster, and this is something the herders, rational agents all, can be expected to appreciate. Their trouble is not ignorance about this, or a fetishisation of the short-term, it is rather that the nature of the 'game' they are involved in makes it irrational for them each to act on long-term considerations unless all do so, but, of course, confronted with the open commons this is not to be expected. It is, then, beside the point to argue that *morally* all ought to do this, for even if this is true, in the game our players confront those who honour such a truth do no more than facilitate the exploitative practices of their less virtuous fellows. We have made this point elsewhere by speaking of the *fragility of goodness*.[5] That is to say, it only takes the manifest gains of one who succumbs to temptation (and such a one can always be relied upon to exist), one who grazes extra beasts on the pasture and/or neglects strategies of resource sustainability and improvement, for the whole moral edifice to begin its fatal erosion. The problem is not that people are, or become, positively attracted to immorality, it is that the very material success of those parties who succumb to temptation tends to push the notion of 'goodness' towards that of 'stupidity'. Those who succumb to temptation and profit where others refrain tend inevitably to think of those who remain wedded to a now costly virtue as 'suckers', and those 'suckers' pretty soon come to resent being 'made a fool of'. Either way, while one may long for moral virtue, and long for it for all, in this world the barest rational self-interest captured by the idea that people like to think of themselves as something other than 'suckers', is sufficient to engender the tragedy.

Should we then understand the tragedy in a different way? As a failure to restrict access to the commons, so that the solution is to *close* what, as open commons, are temptations to rationally engendered disaster? Clearly, however, and by itself, this is not the complete answer. The logic of pastoral destruction is such that it operates even if only *two* herders are permitted to run as many beasts as they each decide on the pasture. Closing the commons only offers the hope of a solution to the extent that it serves to fully *internalise* the costs of over-exploitation and under-maintenance of the commons to the practical decisions and determinations of the herders. If this is achieved then the rational self-interest of the parties concerned pushes not to collective disaster, but to the sustainable management of the resource. On this – the correct-reading of the tragedy – it is a tragedy of *externalities* (of the [over]production of negative externalities, and of the refusal to engage in activities which generate positive

externalities) and the solution lies with the internalisation of such externalities. But how is this internalisation to be achieved? Hardin offers two main strategies, each of interest in itself, but both, as we shall see, flawed to the extent that he neglects the possibilities of *risk pooling*, and instead insists on radically individualistic strategies of internalisation. For Hardin, *internalisation must return the full costs and benefits of production and consumption to the perpetrator alone*, either directly, through privatisation, or indirectly, through political coercion. The possibility that to insist on such might itself generate management problems and difficulties is not countenanced, though it is virtually certain to do this. We argue instead for a structure and process of internalisation which, while as complete as Hardin wishes, is expressed through a *community of concern*, not shafted home entire to the individual isolate.

The radical individualism of Hardin's approach is found most obviously in his preferred strategy of internalisation, the creation (and extension) of *private property rights*. If the pasture is closed by fencing, so that each herder has his or her own land, then over-exploitation and under-maintenance become sins against personal self-interest, and thus irrational (it is as if the individual would play themselves for a sucker). Notice that each herder is required to care only for his or her own land and is not expected to exhibit a concern for the well-being of the pasture (and so community of pastoralists) as a whole. Private concerns are (so it is claimed) transmuted as if by magic (indeed, the magic of the 'invisible hand') into a default guarantee of collective well-being.

The second strategy is to apply when the imposition of private property rights is either impossible or impractical because the fencing option, or some equivalent, is unavailable. In such cases, Hardin argues, successful internalisation demands we set up some kind of 'socialist' system of control. That is, a centralised system of authoritative politico-legal regulation for the imposition of benefits and penalties on those individuals who engage in practices which adversely impact on the resource base, or who shirk their responsibilities for maintenance and conservation. Rather than instituting a *laissez-faire* private property economy for resource exploitation, we move instead to something better understood as a *command* economy aimed at the conservation and protection of communal resources.

Hardin is clear that the second strategy of internalisation is on the whole less desirable, because less likely to be effective, than the first; and, at least as his individualism leads him to envisage the alternatives, he is undoubtedly correct. In essence the problem lies with the *authoritarian* nature of such centralised control, or, at least, with the inevitable perception of such authoritarianism when individuals' interests are thwarted or over-ridden by the commanding authority. Even though establishing such an authority might initially seem a clear case of rationally self-interested self-regulation, still the indirect nature of the internalising strategy involves a sharp distinction between *regime* and *individual* which

encourages in the former a highhanded and insensitive selfishness, and in the latter strategies of avoidance; and in both engenders a potential for hostility and alienation which raises the costs and challenges of compliance, and encourages the development and pursuit of more immediately private goals.

Given this, it is clear why Hardin places most faith in the former course. Yet such a course is itself highly problematic as a resource protective device in ways his analysis fails to acknowledge.

The problem with privatisation for the effective internalisation of externalities does not lie in setting the individual against an authoritative agency; it lies more in the isolated vulnerability it imposes on the individual owner. Even in the ideal circumstances for internalisation through private property (that is to say, in circumstances in which the assigned property is – as it is not under our economic circumstances – *inalienable*) the fact that internalisation bears entirely on the individual means that individuals are vulnerable in ways that might well lead to the rational (if desperate) over-exploitation or under-maintenance of the relevant resource. To remain with Hardin's parable, it may be that I am forced to over-exploit the pasture because I need X number of beasts to be viable, but that climatic conditions have been such that, at present, this number exceeds the sustainable carrying capacity. In such circumstances I may have no choice but to overgraze, even while I know that this is what I am doing. And things are worse under the conditions of a capitalist market economy where property is *not* inalienable and where the level of returns depends in major part on successful competition with one's fellow producers. It may be, for instance, that such a strategy of over-exploitation and under-maintenance is necessary to provide an attractive price for the resource, or that such exploitation promises high returns in the short-term, which returns are then available for reinvestment in more profitable areas of the economy.

We conclude that Hardin is right to locate the problem embodied in the tragedy of the commons as a problem of externalities, and to point to the internalisation of such externalities as the required avoidance strategy. His focus however on such internalisation as a matter entirely for the individual as they confront a punitive regulatory regime or find themselves enclosed alone within their private holdings, fails to provide an adequate and reliable solution to the tragedy. Missing in Hardin's analysis is a recognition that the internalising strategies required promise to work better if they have a *communal* dimension of a kind that cannot be provided by setting the individual against an external authority or by an unquestioning faith in the efficacy of an 'invisible hand' mechanism. To see what such a communalist dimension might be, and to see how it might escape the problems of authoritarianism that Hardin cannot avoid, let us begin by considering the history Hardin's parable crucially misrepresents.

LEARNING FROM HISTORY

The common pastoral land of traditional agricultural communities was only a part, though a crucial one, of a more general system of agriculture, the 'Common Field' system. In this system access to the commons was restricted to a particular group (the eligible members of the community) and to certain times (whenever conditions were so severe that private pasture was insufficient for the maintenance of the herds) and carried with it recognised responsibilities for maintenance and care. Thus the common pastoral land was subject to a communally formulated and enforced regulatory regime which worked to establish it as a kind of communal bank – that is to say, as a form of collective savings – against a risky future. As G.K. Chesterton wrote:

> A Common was not a naked and negative thing like the scrub or heath we call a Common on the edges of the suburbs. It was a reserve of wealth like a reserve of grain in a barn; it was deliberately kept back as a balance, as we talk of a balance at the bank. [6]

In good times the common land was left alone, to be drawn upon when private resources were exhausted or in danger of exhaustion. By using the common pasture in this way the herders instituted a pool of collective savings to deal with future problems. The regulatory regime so created managed, at the same time, to minimise the potential for hostility and conflict between individual and regime; for such a regulatory regime is not a matter of authoritarian commands that one do, or not do, this or that with one's resources, not a matter of the individual set against authority, but is an *enabling* and *mutualised* insurance regime. The security it provides benefits each and all in their attempts to manage and deal with risk and uncertainty.

Nor did the place of insurance in internalising the risks of their activities in the face of an uncertain future end with the commons. The kind of risk pooling community it embodies also found expression at the level of private ownership. While each agriculturalist had their private lands for self-directed strategies of exploitation and maintenance, these holdings were themselves geographically dispersed so that risks from such things as flooding, fire, drought and disease, were spread across the community of landholders. *Pace* Hardin's championing of privatisation, risk was not internalised entirely and only by the individual owner (with all the individual vulnerability that implies) but internalised also by the (now risk pooling) community. And notice that the community in question is not a moralistic creation of the kind Hardin rightly impugns, but is a creation of that self-interested rationality which both sets us on the path of the tragedy and promises a means of escape.

INSURANCE COMMUNITIES: FROM HARDIN TO BECK

By uncovering the role of risk pooling and dispersal in effectively internalising externalities we open the way for a more sophisticated analysis of the challenges and promises of environmental politics than Hardin's simple dichotomy – privatisation/coercive command – allows. To understand the political implications and challenges of this revised analysis we need to explore the ways in which such insurance communities might constitute themselves, or might be constituted.

A crucial distinction, and one absent from Hardin's analysis, is that between externalities that operate in an essentially *endogenous* way, and those that manifest themselves in an *exogenous* manner. This distinction, while it points to matter of fact, matters here insofar as describes the relevant agents' *appreciation* or *assessment* of their situation.[7] Thus endogenous externalities are those that are understood to bear *directly* on the community which produces those externalities. So in Hardin's case the herders themselves, *and no one else*, knowingly bear the costs of their over-exploitation or under-maintenance of the resource. Exogenous externalities on the other hand are not taken by the externality producer as bearing down on them, but on others outside the circle of risk or hazard production.

The former case, that of endogenous externalities, characterises those traditional common property regimes Hardin misrepresents in his parable, and which have occupied the attention of theorists like Ostrom and McKean as they seek for better and more effective forms of environmental management. In such manifestly endogenous contexts the self-interest of the members of the risk producing community is clearly and directly engaged: thus producing negative externalities in the short-term will bring *them* collective disaster in the long term. To the extent that self-interested rationality provides a means of averting disaster, the parties have good reason to internalise such externalities through risk pooling strategies of the kind exemplified in the mutualised insurance regime of the common field system of agricultural production.

Such endogenous risk managing regimes lie at the heart of the common field agricultural system, but they can also and easily be found elsewhere. Kube, for instance, discusses those merchants on the Yangtze River in ancient China who pooled their risks of cargo loss by spreading their individual goods across the community of privately owned trading vessels, ensuring that if a vessel was lost, no one merchant lost everything.[8] Certainly, if the parties at risk are smart enough to envisage the internalising strategies Hardin proposes, they can be expected to see the advantages of mutual risk pooling and loss dispersal. Self-interested rationality alone, however, in the case of the production of exogenous externalities does *not* lead so easily, if at all, to an insurance based scheme of internalisation, for in such cases the generated externalities do not themselves

impact back on the risk producing community as they do in Hardin's example, or, if they do so impact, do so with such a degree of indirection and diminution, that self-interested producers can safely ignore them. The community necessary for such externalities to be internalised through risk pooling and management is not something that can be expected to spring forth naturally. On the contrary, the formation of a community of liability presupposes something akin to Hardin's less preferred solution of regulatory control. Because the externalities are (for practical purposes) exogenous, not endogenous, the imposition of liability can be expected to be more clearly a matter of imposed political control and direction rather than the result of a natural community of self-interest. It is only by being *made* liable for the consequences of their actions that producers of exogenous externalities are forced to consider savings and risk-pooling strategies. This suggests an immediate, if troubling, political demand: *exogenous externalities must be internalised through the imposition of liability upon their producers for the (possible, anticipated) consequences of their activities.* If an insurance community of self-interested producers does not exist, it must be created, and it can only be created through an imposed structure of politico-legal regulation. This means that an environmental politics cannot avoid the need for authority, and sets us the challenge of showing how such authoirity can be distinguished from that authoritarianism of which Hardin is properly suspicious.

It is at this point that the work of Ulrich Beck comes into contact with Hardin's analysis. For Beck, who focuses not on traditional communities, but on contemporary realities, has come to something very like the conclusion we have arrived at here. Thus Beck analyses the emergence of 'industrial society' in terms of the development of strategies of internalisation through public and private insurance pacts, by which we deal with the externalities produced by our developing social and economic processes. In particular what are, from the producers point of view in a pre- or non-regulatory environment, exogenous externalities (take, for instance, the tobacco industry and morbidity from lung cancers), are internalised – and so become endogenous externalities – through the liability demanded for such adverse consequences by a politically constructed regulatory regime.

Beck claims that many of the most serious environmental problems we confront today arise precisely where such strategies of internalisation become simply inadequate for dealing with the 'megahazard' risks associated with the nuclear, biotechnology and chemical industries. These 'megahazards' are, on the objective dimension, endogenous in that they threaten all, including those who produce them, but on the subjective level those who profit from such practices often take such profit, allied with the very magnitude and scale of the risks involved, as sufficient reason for treating such risks as exogenous. Perhaps, as Beck contends, such megarisks are beyond internalising strategies, even when their endogenous character is recognised and formulated within a system of

insurance managed liability; but all that means, on our account, is that they should not be permitted to continue. Drawing on Hardin's analysis of the tragedy of the commons and the history of such commons, our claim is that *risky activities should be permitted only if they are amenable to full liability insurance, and if not, they should be prohibited.* This demand constitutes the content of the politico-legal authority that environmental politics is committed to. Thus, whether or not Beck is right about megahazards can only be determined when we consider whether such externalities can be internalised through insurance-based strategies for risk-pooling; and here the answer is not clear, if only because the absence of the regulatory regime necessary for full liability permits the producers to continue to treat the costs of their activities as essentially exogenous. The real question is how we might construct the appropriate kind of regulatory environment in which the question will find its answer, and how we might do this without falling into that fraught opposition between imposed government command and recalcitrant individual preferences which Hardin rightly reckons insufficient to prevent over-exploitation and under maintenance.

Before we see how the need for authority to internalise environmentally risky activities can be operationalised without authoritarianism, it is appropriate to introduce – though by no means to settle – the kinds of regulatory requirements necessary to ensure meaningful liability. This is where Beck's analysis adds substantially to the Hardin-derived call for risk-pooling.

Beck makes five important recommendations. They are:

1. Establishing correlation standards as the foundation for the legal recognition of damage, instead of strict causal proof, which, given the global interdependence of threat production, can only be produced in exceptional cases;
2. Changing the burden of proof, so that agents in industry and the sciences become obligated to justify themselves in public;
3. Responding to claims of technical safety with liability for damages;
4. Reformulating the polluter-pays principle by creating regional accountabilities for benefitted and harmed business sectors: for instance, coastal regions, with their hotel and restaurant structure, and the chemical and industrial regions, which create the muck that drives away guests;
5. Suggesting and negotiating agreements on the recognition of damage and on compensation payments between a region's industrial plants and its population.

It is not to our purpose here to assess or add to these recommendations, though there is one we would add immediately to the list. It is that claims for

compensation should be open to all who can make a case for the adverse impact of others' activities, and not, as is too often the case, only to certain government-sanctioned bodies (in the Australian context, for instance, often only the Environmental Protection Authority, or some other government organisation, is able to initiate legal action). If this is not so, then it is all too easy for political pressure to be utilised to undermine accountability. However the final policy recommmendations turn out, their import is clear: *it is to ensure that (potential) externality producers cannot avoid liability claims.* In particular it is to ensure this by making sure that such producers are open to be held responsible by those who bear the costs of such activities. And it is here that we see how such authority avoids authoritarianism.

For a Beck-style regulatory regime manages to insist on full liability for risky activities, and so on the necessity for risk producers to find the necessary insurance cover, without that regime itself appearing as an agent concerned to actively intervene in, or direct, the behaviour and activities of such producers. Rather the regulatory regime constitutes that *background* which enables, in the *foreground*, self-interested rationality to produce effective risk-management. So consider that while it may be in the interests of any particular such party or group to, if it can, pass its externalities on to others, it is never in their interests to allow *others* to pass their externalities on to them. While it is, as Hardin points out, entirely rational for any individual herder to place an extra beast on the (open) commons, *it is equally rational for the herder to try and prevent others from so doing*, and it is this *quid pro quo* rationality of mutual coercion we seek to exploit. Imagine, for instance, the situation of a chemical producer who treats their waste products as exogenous externalities by pumping them into the passing river to be dispersed down stream when those who depend in some way on the health and safety of the river – those businesses, restaurants, hotels, householders, etc. downstream – are empowered by a regulatory regime upholding full liability to hold them accountable for any losses and harms deriving from the polluting activities.

On the basis of such mutually overlapping systems of risk policing we hope to find a self-interested foundation for the acceptance of insurance-managed liabilities as concerned parties utilise the regulatory framework to *hold each other* responsible for such management. The aim would be for the regulatory regime of insurance-based risk to shift responsibility for managing risk to society from the regulator to the regulated themselves. This is what Hardin could, and should have meant, when he spoke of the possibility of 'mutual coercion, mutually agreed' as a means of averting the tragedy of the commons, rather than allowing his radical individualism to assimilate such to the 'socialist' style of management.

IMPLICATIONS AND RESERVATIONS

In these final paragraphs we briefly draw out some of the key elements and implications of this understanding of environmental politics.

By drawing a distinction between the regulatory background which demands full liability insurance for risk production and the foreground in which producers and their (potential) victims make their individual decisions on investment and accountability, we have disarmed Hardin's objection of authoritarianism. There is authority at work here, to be sure, but not in such a way as to impinge upon the operations of market forces. All that is required is that externalities are internalised, and that producers bear the real costs of production. In strict economic terms, this is *not* distorting the market, but extending its reach through political-legal regulation so as to remove those market distortions that encourage the production of negative externalities. We use the market itself as a self-policing device for achieving environmental ends – something that should warm the hearts of even the most committed neo-liberal economist. It involves regulation, yes, but only of the kind that all markets presuppose: it must deal in legally recognised commodities, and along legally recognised lines. We do not have a command economy and the authoritarianism Hardin fears, but a system in which individual agents make their own choices against a background which, through the demand for liability insurance, effectively regulates outcomes – something true of production in any mature market system. Market freedoms have not been infringed or inhibited because nothing has been said as to *how* in particular cases risk producers should go about managing risk, only that such management is required. How the demand is met is up to the risk-producers themselves. One may expect such producers to look more favourably on the flexibility such a system offers than on traditional command and control regulations.

Freedom has not been infringed either, through the demand for full liability insurance. We envisage, as our addition to Beck's recommendations indicates, that the demand is not something to be exercised only by, or at the initiating permission of, government or the State, but that it is, and can be, exercised by any concerned parties, and exercised against any agent or agency as their activities have environmental impact. Such a system provides incentives for risk minimisation rather than evasion, for minimising strategies can, on the one hand, be expected to generate savings through premium reductions, and, on the other, to increase profit by minimising the need for compensatory payments. Further, this can be expected to encourage the market-generated development of non-governmental institutions whose major role would to be to monitor environmental harms and point the way to their minimisation. These would not only be developed by the communities which might be affected, but by the insurance industry itself concerned to reduce its levels of exposure.

Equally, there is built into such a system a certain *precautionary* element of the kind environmentalists often speak of, but typically fail to distinguish from an empty and idle hostility to change and innovation. In effect we have the possibility of *operationalising* the precautionary principle in an economically hardheaded fashion, without turning it into a reactionary conservatism. Those proposing to engage in risk-producing activities do so, as do their investors, in the knowledge of their (potential) full liability for the adverse consequences which might flow from such practices.

It is time for some cautionary remarks. In particular we should not underestimate the challenges and difficulties in the way of such an approach, nor the range of its effective operations. Among these are the preparedness of governments to sidestep the requirement of full liability for risk production for partisan political reasons; a recent, and deeply troubling example, being the successful lobbying of the European Parliament by the biotechnology industry to excuse them from any liability for the potential risks of such technology.[9] Instead such risks have been *de facto* externalised onto the community of tax payers: for if such risks eventuate, then governments will have little choice (as with Chernobyl) but to assume the (unfunded) costs of compensation, rectification and remediation (assuming, of course, such is still an option). The risk producers, in other words, have been allowed to continue to treat these risks as exogenous.

The scale and diffuse nature of many of the environmental risks and hazards we face often make realistic actuarial calculations difficult, perhaps irredeemably so, and then too, often enough we do not know they exist until after they have done their surprising work. The latter problem cannot be solved, but it can be managed on an institutional level through a system which generates an insurance industry to manage the consequences on externality producers of strict liability for the consequences of their actions. The former problem tells especially with risks already incurred. For example, greenhouse warming is terrestrial in scale, its causes diffuse, its costs inestimable. Here we face the kind of problem Beck pessimistically calls a 'megahazard', and here it may be too late to do anything much with except bear the consequences – assuming we can.

It is a truism, but true for all that, that all we can do is what we can *do*. And we hope to have sketched at least the path by which we might do something, and something effective at that. And remember – and it is crucial to remember this – we are not dealing with problems which, like equations, can be solved once and for all. We face, in even the most optimistic scenario, management challenges and problems which will not cease, which will not be solved to be forgotten, but which will last at least as long as our style and standard of civilised existence. Let us try – if only out of respect for who we are, and for what we hope for our descendants – to manage these problems, and to do so by putting in place those management systems which are available to us, and through which we can at least attempt to bear the costs of our activities. We should insure the future.

NOTES

We would like to thank an anyonomous referee for comments which have much improved this paper.

[1] Hardin first presented his view in 'The Tragedy of the Commons' (1968). He has since published many further books and articles without, however, moving significantly away from this initial formulation.
[2] *The Australian*, 31/12/98, p. 8. More recent work emanating from Munich Re is even more troubling. A 1999 study reported in the *Guardian*, Friday December 8, 2000, predicts that, if things continue as they are, 'by about the year 2065 the economic costs of climate change could surpass the value of total world economic output'! Pretty clearly this should not be taken to mean that the insurance industry cannot manage our environmentally disruptive actions; but rather that it cannot manage such actions if they are permissable without the demand for full liability. Such a demand would, of course, mean curtailing or otherwise actively managing many such activities.
[3] Ostrom 1994; McKean, 1992.
[4] The most succinct and focused exploration of the theory of the risk society as it bears on environmental issues is to be found in his *Ecological Enlightenment* (1995).
[5] Lynch and Wells 1996, p. 2.
[6] Chesterton 1987, p. 391.
[7] The idea of risk has two dimensions. On the one hand it aims to reflect objective probabilities founded in the nature of the world, on the other, as it emerges into risk assessment and planning, it is articulated in the degree of belief we have in the relevant claims. This bifurcation is important, for it opens the possibility that agents may, for various kinds of reason (for instance, an overwhelming faith in their personal capacity to avoid or separate themselves from the adeverse consequences) insist on reading what are 'objectively' endogenous externalities as, for them, exogenous.
[8] Kube 2000.
[9] Osborn 2000.

BIBLIOGRAPHY

Beck, U. 1995. *Ecological Enlightenment: Essays on the Politics of the Risk Society*, tr. Mark A. Ritter. New Jersey: Humanities Press.
Chesterton, G.K. 1987. *A Short History of England*, reprinted in *The Essential G.K. Chesterton*, ed. P. J. Kavanagh. Oxford: Oxford University Press.
Hardin, G. 1968, 'The Tragedy of the Commons', *Science*, **162**: 1243–8.
Kube, Douglas J. 2000. 'Risk Management, The Insurance Industry and Sustainable Development', published on the internet by the American Risk and Insurance Association at <http://www.aria.org/>
Lynch, T. and Wells, D. 1996. 'Environmentalism and the Social Contract', *Political Theory Newsletter*, **8**(2).

McKean, M. 1992. 'Management of Traditional Common Lands (*Iriaichi*) in Japan'. In D.W. Bromley, D. Feeny, M.A. McKean, P. Peters, J.L. Gilles, R.J. Oakerson, C.F. Runge and J.T. Thomson, (eds), *Making the Commons Work: Theory, Practice and Policy*. San Francisco, Institute for Contemporary Studies Press.

Osborn, A. 2000. 'Euro Vote "lets GM companies off hook"' *The Guardian*, April 13.

Ostrom, E. 1994. *Governing the Commons: The Evolution of Institutions of Collective Action*. Cambridge: Cambridge University Press.