

Towards a Sustainable Society

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Environmental law and policy adapting to the future?

Environmental law and policy (ELP) has grown dramatically in recent decades, especially in the industrialised world. In response to a burgeoning range of environmental problems, environmental groups have become vocal in demanding greater protection, and many governments have created complex regulatory regimes and policies. Nonetheless, during the mid-1990s, ELP is undergoing a difficult period of sceptical questioning and re-appraisal. Despite some successes, many environmental problems have not shown marked improvement, both in Australia and elsewhere, and other problems still resist even basic understanding.¹

To a great degree, the failings of ELP can be seen as growing out of the field's relative lack of attention to how society needs to be reshaped, rather than merely mitigating environmental problems. To make more effective progress, ELP systems worldwide need to deal with two key, and interlinked, issues during the next few decades. One is the need to shift toward targeting the causes of environmental degradation. The other is the need to recognise and overcome the fundamental uncertainties present in natural and social systems. Yet these developments are currently hindered by predominant ELP approaches that are based on a kind of 'institutional settlement' characteristic of industrial countries (and increasingly, many developing countries). This settlement is a combination of a liberal democratic polity, a capitalist market economy, the individualistic concept of property ownership, and the liberal legal system.

Consequently, ELP needs to take much greater account of how social institutions can be designed, and to challenge the dominant institutions. While some 'deep ecologists' have highlighted the importance of questioning the capitalist market economy, their analysis tends to ignore the significance of causation and uncertainty, and seldom offers constructive proposals for reform of social institutions in this light. In this article, I briefly touch on some of the very complicated social theory issues raised by ELP's successes and failings, and try to illustrate how we need to think more about how social institutions, such as firms and the legal system, can give rise to a more truly sustainable society.

New visions of connectivity and complexity

Much debate currently centres on how environmental problems should be interpreted and tackled. This debate is greatly influenced by new insights in the natural and social sciences that show why more traditional approaches to environmental problems have tended to work less effectively. Since the legal system is an important social institution, and helps implement environmental policies, lawyers need to understand and draw on these new discoveries. As environmental lawyers have long understood, they must absorb a broad variety of non-legal knowledge to be able to make effective environmental laws, and this trend will continue.

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It is now recognised that environmental problems involve multiple social, political, ecological and economic factors interacting together over time and space.² These factors may directly cause environmental problems, or may contribute to these problems at more and more diffuse distances. It is no longer possible to divide social and economic factors from the policies developed to deal with environmental problems.

For example, land degradation in Australia is affected by the activities of farmers who remove soil or reduce protective features (such as natural wind-breaks).³ These activities, in turn, occur as part of a social context in which farmers seek to earn income from crops or livestock whose prices may fluctuate widely, to be able to repay bank loans and sustain themselves. The cultural knowledge and social attitudes of farmers also play an important role in the treatment of land. In many cases, access to land may be imagined as part of a highly individualistic property ownership system, and therefore to be preserved from external 'interference'. ELP needs to address these social, economic and political factors as well as the ecological aspects.⁴

In addition, the fundamental indeterminacy inherent in natural and social systems is being explored through contemporary research. Scientists had assumed that the world could be managed through top-down, mechanistic techniques and concepts, and that it was possible to predict fully the behaviour of natural and social systems. A classic example is the way in which engineering solutions have been used to control natural water flows. Dykes may be built to prevent occasional river flooding, as in the Mississippi River basin of the United States. But research is showing that complex natural and social systems are dynamic, non-linear and adaptive. Thus, the Mississippi dykes seem to have only intensified floods, when they did occur, into even more catastrophic events because of the non-linearity involved.⁵

One example of the new research is the so-called science of 'chaos'.⁶ Very briefly, this approach looks at how large-scale phenomena can arise from seemingly small and random events, following simple principles but developing unpredictably. Another new science, 'complexity', examines how complex features develop from the ways in which systems organise themselves. Historical accidents also can influence profoundly the subsequent development of a system, as with the new dominance of mammals following the mass extinction of dinosaurs some 65 million years ago. It is thus difficult to know precisely what may occur in a system in the future, as well as its past history in depth. These insights apply to both natural and social systems.

Still another example is the 'dynamic equilibrium' concept that has developed in ecology.⁷ This concept refers to the ways in which natural systems often undergo change through time and space, swinging to and from different levels of behaviour, but often in ways that maintain the system's overall dynamic stability. Systems are never static, but tend to be adaptive, responding to environmental changes with alterations in their nature and behaviour. While some understanding of the principles of change can be developed, it is very perplexing to foresee how a system may change.

The availability of information is another important limitation on our knowledge. As in particle physics, there will always be significant uncertainty present in any environmental problem. Detailed information can be collected only for some parts of natural and social systems, and the reliability of the data is vulnerable to errors of compilation and analysis.⁸ The complex interactions between the various ele-

ments in a system can only be glimpsed by researchers and policy makers.

Two important consequences flow from the nature of environmental problems. Policy makers must not only target the causes of environmental problem, but also adapt to the dynamic development of these problems through time and space in a setting that is uncertain.

Causation

Policy makers increasingly understand that often the most effective way to rectify environmental problems is to target the causes of these problems. Early environmental protection efforts tended to focus on the symptoms of environmental decline. For example, pollution laws initially prescribed the technology to be used in achieving specific ambient air quality standards, trying to control the composition and amount of polluting emissions. While these approaches have resulted in some improvements, their results often are reversed by increased overall production and consumption rates in a community. It would have been more effective to have redesigned the industrial processes generating the pollution, so that these processes used fewer resources or raw materials not giving rise to the pollution.

In response to such discoveries, policy makers now seek to come closer to the causes of environmental problems through their policies. Here, the diverse range of environmental problems is important. Some problems are more easily conceived in terms of relatively discrete and near causes (like industrial processes). Other problems, such as biodiversity losses or environmental health, involve an array of social, political, economic and ecological factors that are more confused, messy and remote in their interactions. This explains why policy makers have tended to adopt a more explicit 'causal' approach in the industrial waste field, whereas they have been much slower to approach other problems similarly.⁹

If policy makers are to target the causes of environmental deterioration, they must consider the role of social institutions. The structure and operation of a wide range of social institutions contribute to environmental problems. Social institutions vary greatly in their size and influence, and exist at a multiplicity of levels in a society. For example, from a macro-scale point of view, the market economy is a key social institution, helping set the terms of economic transactions and influencing broadly how businesses decide to exploit natural resources. It helps drive the dynamic of economic activities, which in its capitalist forms is essentially to extract as much surplus (or profit) from an activity as the market will allow.

At a lower level, individual corporations choose what products to manufacture, the industrial processes to be used, and the nature and quantity of resources to be used in these processes. It is revealing that the industrial activities of firms now generate by far the largest share of wastes and pollutants in developed nations. In 1990, for example individual households generated only 1% of the total solid wastes in the US even though they are far more numerous than firms. By contrast, corporations produced around 65% of the overall level.¹⁰ These figures are likely to have a similar trend in Australia.

As a powerful social institution, therefore, firms have a disproportionate impact on the environment. If the adverse effects of industrial society are to be prevented, it is imperative to deal with corporations. While there has been growing

attention to the need for firms to develop environmental management systems, there has been much less emphasis on how these firms may need to be redesigned.

Indeterminacy

Policy makers face many problems in developing and implementing environmental policies. Commonly, they lack adequate knowledge of the complex interactions in natural and social systems. They are less able to anticipate how a natural or social system may respond to changes made by a management measure (such as a new law). Assumptions made about the nature of a problem may turn out to be mistaken, but an extensive regulatory framework may have been erected on the basis of these assumptions in the meantime. The more elaborate and rigid a framework becomes, the more difficult it becomes to respond to new developments.

A government may decide to reduce the production of industrial wastes. Various policy instruments, such as traditional command-and-control approaches, market measures, or subsidies to firms for the purpose of installing improved technology, are available for use. Because the interactions between business decisions, consumer pressures, the broader economic setting, and government policies are inherently uncertain, the government does not know which policy instruments (or mixes) may work effectively in a particular situation. By choosing a specific approach, the government effectively invests significant resources in 'institutionalising' that approach — which may fail.

Despite the uncertainties of natural and social systems, policy makers can make progress in dealing with problems if they use an 'adaptive management' approach.¹¹ They can accumulate increasingly reliable and comprehensive knowledge about which policies are effective in what situations, by setting up experiments in diverse settings and testing hypotheses as to the effects of specific policies. For example, we do not know precisely what policies may effectively minimise waste, especially in the light of regional variations within a country. Policy makers could use a mixture of traditional regulation and education in one region, while using market measures in another region, and combining subsidies with education in yet another area. They can follow the impacts of these policies through time, and assess whether they work effectively enough to be applied more widely.

Trying out many different possibilities at once, with careful controls over their application to ensure the reliability of the information produced, is more likely to lead to progress than a uniform application of one standard policy approach. But this kind of uncertain experimentation requires a reworking of current social institutions, which need to be sufficiently fluid and learning to be able to encourage adaptive strategies.

The key role of social institutions

To better deal with environmental problems, ELP needs to target their causes and to promote adaptive strategies. This requires close attention to the nature and operation of social institutions. Not only are social institutions such as firms or the market economy deeply implicated in generating environmental problems, adaptive strategies also must be implemented through social institutions. It is crucial for lawyers and policy makers to look at how social institutions may be altered to better facilitate environmental protection. What has been missing to date has been a sophisticated analysis of the institutional factors underlying ELP, as well as constructive proposals for reforming these elements. Since the law is itself

a social institution, and tends to embody a kind of institutional settlement favouring environmental degradation, it may be that some of its features also need to be reconceived.

A number of approaches to ELP's perceived failings have emerged. Conventionally, these failings are attributed to the dominance of vested interests. Powerful actors, such as large corporations or politicians seeking donations, oppose efforts to strengthen environmental laws. This is seen in contemporary attempts by the Republican-led US Congress to 'deregulate' environmental laws, with proposed substitute laws allegedly being written by lobbyists. In Australia, the Bjelke-Petersen Government in Queensland often ignored environmental problems, such as the toxic waste site at Kingston in Brisbane.¹² It is claimed that ELP has become 'captured' by powerful interests.

Moreover, ELP is sometimes said to be liberal individualistic in its basic ideology, and to favour the rights of individuals and corporations to use resources extravagantly, while pretending to promote the greater community good. Thus, Matthew Alan Cahn argues (simplistically, in my view) that American ELP is based on a series of deceptions, in which ELP engages in the rhetoric of strong environmental protection laws while the practices of regulatory agencies, governments and corporations impair these laws from exerting their full impact.¹³ He asserts that policy makers do not challenge the primacy of individual rights and that the exercise of these rights leads inexorably to environmental decline.

Although these kinds of explanations do have some force, they fail to cover the full complexity of environmental problems. The failings of ELP are not wholly due to the dominance of interests and ideologies, but relate to a matrix of deficiencies ranging from an excessively top-down and static approach to regulation, a failure to target the causes of environmental problems, inadequate information, to the economic dynamics that drive contemporary market societies. Many deep ecologists, like Carolyn Merchant or Anne Naess, see that the structures and operations of a society have a profound impact on the environment.¹⁴ They are closer to what may be a strong analysis of the environmental crisis. Yet they do not emphasise a social institutional approach, in that they do not look at how social institutions are part of the problems and the solutions. They do not consider how causation and uncertainty affect social institutions in ways giving rise to environmental decline.

In short, we need to take a social theory approach to ELP, instead of merely treating it as part of the body of law that governs our society.¹⁵ A multi-faceted approach is required, one that looks particularly at how existing and alternative institutional forms can constrain or promote environmental protection. How do our social settings help produce, or rectify, environmental problems? We must question the social institutions that we now have, and assess how ELP can contribute to beneficial changes in these social institutions.

The institutional settlement and its effects

The industrial countries, and increasingly many developing countries, share a number of interlocked features that give them a distinctive institutional flavour (pilfered through local conditions). This combination of features emerged gradually during the 18th century onwards, and has attained its most emphatic forms only in the late 20th century, with the rise of an international economic order based on multi-national corporations, international institutions, and capital flows. It

is a kind of 'settlement' aimed at sustained economic and political stability. The liberal democratic political system, the capitalist market economy, the individualistic concepts of property ownership, and the liberal legal system all are part of the institutional flavour.¹⁶ It is now difficult to imagine a developed world without these features, even though they have emerged comparatively recently.¹⁷

The features are not inevitably adverse in themselves, nor are they necessarily deliberately designed. They can generate significant benefits for people and the environment. Indeed, the market economy has the potential to produce innovations that help advance environmental protection. Democratic politics have the potential to lead to profound social changes through popular, environmentalist movements. The reality is that social institutions now exist in forms that help generate or exacerbate environmental problems. For example, the market economy now exists in a form that drives unsustainable economic activity. Present political systems do not clearly foster participatory democracy at the grassroots level, and thus may make the political process more impregnable to environmental concerns. The legal system may not readily allow the targeting of causation and uncertainty because of its institutional and conceptual nature.

ELP is currently made and applied within the institutional settlement. Despite the efforts of some radical environmentalists to challenge this reality, by asserting a biocentric viewpoint, ELP continues to be defined by, and to reinforce, the institutional settlement. Briefly, the institutional settlement tends to divert attention away from the ways in which the structures and operations of a society can help create pressures leading to environmental degradation. It tends to reduce the scope of alternative institutional forms that could be used.

The interactive links between institutional forms and environmental problems are very complex. Much work needs to be carried out to better understand the 'ecological economy' effects of changing social institutions in different ways. In this article, I can only touch generally on two examples of how social institutions may contribute to environmental problems, without discussing specific solutions.

First, business is increasingly seen as the most important arena for environmental policy in industrial societies, since corporations now consume most resources and produce most wastes. Why do they engage in their current consumption and production wastes? This is a question now being explored by policy makers, since the answers will help identify the most effective policies that can be adopted. To date, several answers have been proposed, all of which undoubtedly are part of the solution but which still are inadequate.

Environmental economists have long contended that firms do not adequately internalise the ecological costs of their activities, and that the community bears most of these costs as 'externalities'. Consequently, firms fail to make appropriate, cost-based decisions on resource use in the first place. To force firms to internalise the true costs, and change their practices, market-based measures such as taxes or tradable pollution permits could be used by policy makers.¹⁸ Other analysts argue that the better approaches are to be found in 'industrial ecology' and environmental management systems, which focus on how firms can change their corporate culture voluntarily.¹⁹ Firms can redesign industrial processes to reduce inputs and outputs, build management systems to better control decision making, and re-engineer the flow of data to highlight environmental effects.

Yet all these approaches do not alter the nature of the existing capitalist market economy. Market measures actually take advantage of the marketplace, capitalising on its dynamics even while purporting to modify these dynamics. Industrial ecology and management systems, while seeking to change the culture of firms, do not necessarily address the broader economic and social context. The general operations and structures of market economies and firms are largely left intact. It is not clear how far the institutional settlement can be changed by these approaches. It may be more fruitful, ultimately, to rethink the ways in which businesses operate so that they concentrate on social wealth generation rather than a narrow profit-making strategy. Shareholding, ownership, corporate democracy and community investment requirements may all be used to promote greater sustainability. The ideal of a capitalist market economy fixed on profitmaking has come to be powerful, and makes it difficult to experiment with alternative forms of firms and marketplace organisation, to see whether these forms are really better or not.

Second, the legal system may make it more difficult to target social institutions as a contributor to environmental problems. For example, as a social institution in itself, the law tends to shift environmental problem solving into a few specific directions. While capable of undergoing change through time, as shown by the development of regulatory regimes and law reform, the law is fundamentally unable to deal with the causation and uncertainty issues identified above.

The legal system allows only some kinds of actors and behaviours to be targeted, and provides a limited range of remedies. For litigation, there must be an accepted cause of action, there must be recognisable parties, and there must be a discrete dispute. These constraints tend to emphasise procedural issues (how to deal with disputes) over substantive issues (what is to be decided). Rather than ordering that a social institution undergo change to become more sustainable, or restraining environmentally deleterious activities, the law focuses on balancing the factors to decide who should triumph in an adversarial system.²⁰ The law seldom recognises the importance of targeting the causes of environmental problems, and struggles with the polycentric character of most problems, where numerous parties and factors interact simultaneously. The outcome is that the framework in which disputes occur is not itself brought into question.

In recent decades, the emergence of a regulatory regime in the environmental arena has brought about some changes in the relationship between the law and other social institutions. For example, corporations are now required to comply with legislative standards and can be affixed with liability for their behaviour that would not otherwise exist (as with contaminated land sites). The 'individual rights' of corporations to use their properties have been limited to some extent by the substitution of regulation for common law. Nonetheless, the regulatory regime shares the flaws of the broader legal system.

Environmental impact assessment (EIA) in Australia is an excellent example.²¹ While EIA purports to examine whether a particular project is environmentally sound, its framework is built in the form of an essentially procedural approach, taking account of the views of various parties, and then devising an 'acceptable' outcome. Too frequently, EIA is used as a conflict resolution procedure, and not as a means of sceptically reviewing the key assumptions and broader

social context underlying a project. EIA is seldom designed and applied in such a way in Australia as to monitor the continuing environmental impacts of a project, and tends to freeze legal and political attention at the time prior to the project's approval.

Moreover, the legal system provides an arena in which disputes are fought out over environmental issues. Both the debate and the actors may have become increasingly 'institutionalised'. Environmental groups, especially in the US, fight their battles within the terms set by the legal system, using legal concepts and discourse to resolve conflicts that are really about how social institutions may be redesigned. They expend sizable resources on this strategy that could be used to work on reconceiving social institutions. It is difficult to know to what extent environmental groups have become 'coopted' by such legalistic approaches, failing to challenge the dominant institutional forms. Australian groups such as the Australian Conservation Foundation tend to take a more consensual and non-legalistic tack, emphasising lobbying and policy-making work. Even so, this more policy-oriented approach likewise runs the risk of becoming merged with the institutional settlement, by failing to develop and promote alternative forms of social institutions.

Conclusion

ELP needs to undergo significant change in the next few decades, if it is to make meaningful progress beyond what it has accomplished thus far. As part of this project, ELP needs to target the causes of environmental problems, and deal with the uncertainties of natural and social systems. The links between environmental degradation and social institutions are very complex and reciprocal. Not only do existing social institutions help generate environmental problems, they also can help facilitate environmental protection.

To a great degree, the legal system can be used to help redesign our social institutions to be more environmentally sound (through dealing with causation and uncertainty). But what is missing is concrete debate over the alternative forms of social institutions that could be used. This is partly because the institutional settlement has come to dominate our imagination and makes it more difficult to experiment with alternative institutional forms, due to the entrenchment of dominant forms. It is crucial to not only reform ELP from within, but also to use ELP as a means of reshaping social institutions more generally. Lawyers and policy makers therefore need to see ELP in the light of society building, rather than a body of law independent of society. This is a complex and ongoing process, but one that is urgently needed to ease the transition of societies to sustainability.

References

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3. See, for example, Barr and Cary, *Greening A Brown Land: The Australian Search for Sustainable Land Use*, 1992.
4. Cf the approach taken in Blaikie and Brookfield, *Land Degradation and Society*, 1987.
5. See, for example, Clark, W.C., *Witches, Floods and Wonder Drugs: Historical Perspectives*, in *Societal Risk Assessment: How Safe is Safe Enough?* 1980.
6. See generally Gleick, J., *Chaos*, 1989 [chaos]; Gell-Mann, M., *The Quark and the Jaguar*, 1994 [complexity]; Stephen Jay Gould's series of books [historical accidents].

7. See, for example, Pickett and Ostfield, 'The Shifting Paradigm in Ecology', in Knight and Bates (eds) *Natural Resources Management for the Twenty-First Century*, 1995.
8. See, for example, Lee, *Compass and Gyroscope: Integrating Science and Politics for the Environment*, 1993.
9. For example, in 1990, Victoria adopted an Industrial Waste Minimisation Policy that was meant to encourage businesses to adapt their technologies and practices to reduce waste output. This is one of the relatively few regulatory efforts that explicitly takes an causation approach.
10. US Council for Environmental Quality, *Environmental Quality Twentieth Annual Report*, 1990.
11. See Gunderson, Holling and Sanderson, *Barriers and Bridges to the Renewal of Ecosystems and Institutions*, 1995.
12. Walker, K., *The Political Economy of Environmental Policy: An Australian Introduction*, 1993, p.13.
13. Cahn, M.A., *Environmental Deceptions: Liberal Environmental Policy Making in the United States*, 1995.
14. See, for example, Naess, *Ecology, Community and Lifestyle*, 1989.
15. I draw, here, on the ideas in Unger, *Social Theory: Its Situation and Its Task*, 1987.
16. Unger, above.
17. Roberto Unger argues that, to the contrary, our social world is immensely plastic and capable of giving rise to new institutional forms. That this does not occur is due in part to the influence of historical accidents in generating the institutional settlement, and not the supposed inevitable 'fitness' (by natural selection) of the dominant forms.
18. See, for example, Tietenburg, *Environmental and Natural Resource Economics*, 2nd edn, 1992.
19. See, for example, Frosch, R.A., 'The Industrial Ecology of the Twenty-First Century', (1995) 273(2) *Scientific American* 178; Nash and Ehrenfeld 'Code Green: Business Adopts Voluntary Environmental Standards', (1996) 38(1) *Environment* 5.
20. An useful early analysis of this tendency is found in Birkeland-Corro, 'Redefining the Environmental Problem: Some Impediments to Institutional Reform', (1988) 5 *Environmental and Planning Law Journal* 109.
21. See, for example, Raff, 'The Renewed Prominence of Environmental Impact Assessment: A Tale Of Two Cities', (1995) 12 *Environmental and Planning Law Journal* 241.