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Reflexive Law as a Legal Paradigm for Sustainable Development

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REFLEXIVE LAW AS A LEGAL PARADIGM FOR SUSTAINABLE DEVELOPMENT

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> One of the elements of the new fields of environmental regulation is that they are regulating areas dominated by the use of specialized knowledge and new technologies and thus dependent on that form of expertise. Both the regulator and the objects of regulation are then caught up in continually reflexive processes and re-evaluations of the knowledge. By the use of so many new technologies, we are also increasingly drawing upon the future. *It is a qualitatively new challenge for law to regulate on areas which so extensively are drawing upon the future*—in the sense that there may be both comprehensive and possibly significant, negative and unpredictable consequences.[1]

Introduction: Why Sustainable Development Needs New Paradigms

The quotation above captures the essential post-modern dilemmas of legal regulation for the protection of the environment. The dilemmas become even more acute when environmental protection is situated within the broader context of sustainable development, which requires attention to economic and social factors as well as the state of ecological systems. Moreover, sustainable development particularly reminds us that today's decisions are "drawing upon the future" and that we have equitable obligations to bequeath to future generations a world that provides them with as many or more opportunities for their own self-realization as we currently enjoy for ours.

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[1] Inger-Johanne Sand, *New forms of environmental law: The legal regulation of scientific constructions and changes in the relations of law, politics and science—The case of applied genetic technology*, ARENA / IOR, Univ. of Oslo 103 (2001) (draft paper). Ms. Sand makes her observation in a paper on the regulation of genetically modified organisms.

At the same time, sustainable development's broad sweep strains our intellectual grasp of its meaning and outruns the capacity of our current legal and political systems to channel society's activities toward its achievement. Professor Esty, in a moment of cynicism, remarked that "sustainable development has become a buzzword largely devoid of content ... a concept [that] provides little policy traction."[2] While I take issue with Professor Esty's focus on the term itself, there is no doubt that sustainable development needs new paradigms to transform it from visionary rhetoric to a viable political goal. The World Summit on Sustainable Development showed a world desperately seeking effective sustainable development policies and strategies. The desperation was reflected in the new mantra of "governance" and the shifting emphasis in sustainable development measures from "Type 1" traditional regulation and government programs to "Type 2" non-regulatory private or public-private partnership initiatives.[3]

This essay will consider whether the sociological construct "reflexive law," which comes out of the German sociology of law tradition, and some American offshoots such as "democratic experiments" with non-regulatory schemes, might help sustainable development resolve its conceptual dilemmas. Reflexive law has immediate appeal because it speaks to the sustainable development

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2 Daniel C. Esty, *A Term's Limits*, FOREIGN POLICY, Sept.-Oct. 2001, at 74-75.

3 See the explanatory note by the chairman of the Preparatory Committee of the World Summit on Sustainable Development, Partnerships/Initiatives to strengthen the implementation of Agenda 21, *available at* http://www.johannesburgsummit.org/html/documents/prep2final_papers/wssd_description_of_partnerships2.doc (undated; link *available at* http://www.johannesburgsummit.org/html/documents/prepcom3.html). In that note, Type 2 measures are described as follows: "Partnerships and initiatives to implement Agenda 21 are expected to become one of the major outcomes of the World Summit on Sustainable Development. These 'second type' of outcomes would consist of a series of commitments and action-oriented coalitions focused on deliverables and would contribute in translating political commitments into action."

mandate for integrated decision making:[4] it normatively urges social systems or subsystems (such as science, economics, the marketplace, politics, and law itself) to communicate and to interact. Moreover, reflexive law teaches that law works best by specifying procedures for regulated entities to observe in striving for a complex objective like sustainable development, without defining in advance a required substantive outcome from those procedures. Yet this disavowal of law's function in setting specific performance requirements means that reflexive law softens law's substantive rigor, the compulsory effect that may be needed to motivate changes in entrenched unsustainable patterns of production and consumption. In short, reflexive law opens important new perspectives on the role of law, and democratic experiments offer concrete examples of the value of non-mandatory approaches to some environmental problems, but neither reflexive law theory nor our experimental experience justify displacing the mandatory objectives of substantive environmental law from their central role in achieving sustainable development.

This is an "essay" in the classic sense—an attempt, something of an experiment in itself. The ideas presented here are still evolving in my own mind, and I seek as much to provoke thoughtful criticism as to persuade. In an earlier paper,[5] Cliona Kimber and I discussed reflexive law in the context of its use by environmental law reform advocates as a theoretical foundation for certain systems of self-regulation directed primarily at large industrial sources of pollution. We criticized most self-regulation experiments for insufficient attention to the need for public involvement—the participation of individuals, local communities, and non-governmental organizations—in the environmental management choices for industrial enterprises. But we did suggest that reflexive law principles could usefully inform and guide new

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[4] Esty, *supra* note 2, at 75. (Esty argues that "[i]n pushing to overcome policy fragmentation, the concept's authors overstated their case. ... In fact, fostering development and protecting the environment are linked but separate imperatives.")

[5] Sanford E. Gaines and Cliona Kimber, *Redirecting Self-Regulation*, 13 J. ENVTL L. & LITIG. 157 (2001).

approaches to other sources of environmental harm not now effectively regulated, such as agricultural producers or universities and hospitals. In keeping with that suggestion, the current essay inquires whether reflexive law might assist policy makers in devising legal tools to promote sustainable development.

Reflexive Law and Its (Missing) Social Context

First, a brief introduction to reflexive law, a concept not familiar to North American lawyers.[6] The term "reflexive law" was coined by German sociologist Gunther Teubner in a 1983 article analyzing the late-20th century evolution of law.[7] In Teubner's view, modern law's first evolutionary stage was the "formal" private law of the early twentieth century, which vindicated personal freedom of action and primarily served to set rules governing the relations between autonomous private parties. In law's second evolutionary stage, which began in the 1930s and culminated in the mid-century social welfare state, the law became "substantive" or purposive, seeking to direct private action and state action to assure specific outcomes for society as a whole. The Reagan-Thatcher political revolution of the early 1980s reflected increasing skepticism about the ability of substantive law to deliver the desired welfare results, but neither was the law ready to return to earlier *laissez-faire* policies. Teubner saw, then, an emerging "third way," and he sought both to explain it and to show why it represented a normative improvement over the first two stages of law for mediating the complexities of the post-industrial world.

In this initial exposition of reflexive law, Teubner melded the work of two other German sociologists, the systems analysis perspective of Niklas Luhmann, which emphasized the aspect of coordination

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[6] For a fuller but still abbreviated exposition in the American literature, see Eric W. Orts, *Reflexive Environmental Law*, 89 NW. U. L.REV. 1227 (1995).

[7] Gunther Teubner, *Substantive and Reflexive Elements in Modern Law*, 17 L. & SOC'Y REV. 239 (1983).

between social subsystems, and the arguments of Juergen Habermas about the need for democratization of social subsystems to institutionalize "procedural legitimation." Teubner thus included attention to both the "procedures of internal discourse" within social subsystems and to their "methods of coordination with other social systems."[8] As he summarized it:

> Putting the various elements we have discussed together, our theses are: (1) Reflexion within social subsystems is possible only insofar as processes of democratization create discursive structures within these subsystems. (2) The primary function of the democratization of subsystems lies neither in increasing individual participation nor in neutralizing power structures but in the internal reflexion of social identity.[9]

Teubner then made a further comment that is highly pertinent to the idea of reflexive environmental law:

> This brings us to the question of how autonomous reflexion imposes limits on the scope of legality and defines the role of law vis-à-vis other social subsystems. One possibility in vogue today is the policy of the deregulation or reformalization of substantive law. Another one is the policy of proceduralization under which the legal system concerns itself with providing the structural premises for self-regulation within other social subsystems. What is involved here is not only the guarantee of autonomy for other social subsystems, but also Habermas' concept of the 'democratization of social subsystems,' which—with its stress on procedural legitimation—shows the direction in which reflexive law can develop.[10]

In later writings, though, Teubner himself took reflexive law in a different direction. He became more enamored of Luhmann's systems theories, and less interested in Habermas's discursive democracy. He also delved deeply into "autopoiesis," a biological

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8 *Id.* at 255.

9 *Id.* at 273.

10 *Id.* at 274-75.

concept about the self-reproducing, self-organizing, self-maintaining character of cellular organisms that others had extended to the social sphere.[11] From this line of thinking, he restated the central question for reflexive law:

> How is it conceivable that the radical closure of legal operations also means its radical openness in relation to social facts, political demands, and human needs? .... My tentative answer is that social regulation through law is accomplished through the combination of two diverse mechanisms: information and interference. They combine operative closure of the law with cognitive openness to the environment. On the one hand, by generating knowledge within the system itself, law produces an 'autonomous legal reality'. It orients its operations according to this, without any real contact with the outside world. On the other hand, the law is connected with its social environments through mechanisms of interference which operate between systems. The 'coupling' of the legal system with its actual environment and the reciprocal restraints that arise from this are the result of the overlapping of events, structures, and processes within and outside the law. . . . One way of describing the joint action of the two mechanisms of information and interference would be to say that law regulates society by regulating itself.[12]

Teubner insists that the proceduralization focus of autopoiesis does not mean doing away with substantive legal norms. "[S]ubstantive legal norms remain indispensable. It is only that the process of their production and justification has to give way to a 'socially adequate' proceduralization. . . . The question is whether we are dealing with command and control regulation through state economic policy or with regulation through decentralized mechanisms of self-regulation. In the latter case, the law of the state regulates only the contextual conditions."[13] This statement, though, indicates Teubner's belief that substantive norms should be determined through decentralized processes rather than through centralized legislation and

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11 GUNTHER TEUBNER, LAW AS AN AUTOPOIETIC SYSTEM (1993).

12 *Id.* at 65.

13 *Id.* at 67.

regulation. Public law, in this model, is "relieved of the burden of direct regulation . . . and instead given the task of active control of self-regulatory areas."[14] Quite simply, in this version of reflexive law, "Final decisions . . . are always the province of the regulated entities."[15]

Teubner also insists that reflexive law is neutral on matters of substantive legal policy. In his own words:

> "Reflexive law" can ... be equated with neo-liberal conceptions, strategies of deregulation and pluralist self-regulation. Social autonomy, however, is first and foremost a cognitive problem for the law. As far as the law is concerned, we are dealing with the factual rather than the normative dimension of social autonomy. Social autonomy presents lawyers or politicians with the problem of knowing what it is they are actually trying to regulate. This is so irrespective of whether we are trying to unleash market forces through legal policy or subject them to political constraints.[16]

The third aspect of reflexive law is its mixed character as description and prescription. "Here my aim is to defend the dual character of the idea of reflexive law as both normative and analytic. Reflexion in law means both empirical analysis and normative evaluation. . . . First, we have to evaluate the current position of law in a functionally differentiated society. Second, we have to consider the operative consequences of such evaluation . . . ."[17]

Teubner himself asks the key regulatory question that his analysis raises: "If autonomy is by definition self-regulation, how,

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[14] Gunther Teubner, *After Legal Instrumentalism? Strategic Models of Post Regulatory Law*, in DILEMMAS OF LAW IN THE WELFARE STATE, 307(Gunther Teubner, ed. 1986).

[15] E. Bergman and A. Jacobson, *Environmental Performance Review: Self-Regulation in Environmental Law,* in ENVIRONMENTAL LAW AND ECOLOGICAL RESPONSIBILITY: THE CONCEPT AND PRACTICE OF ECOLOGICAL SELF-ORGANIZATION 207, 211 (Gunther Teubner, et al. eds., 1994).

[16] TEUBNER, *supra* note 11, at 68.

[17] *Id.*

then, is legislation as external regulation possible?"[18] Because Teubner views the political system as a closed, autopoietic system in itself, he tends to argue against "intervention" by politics into other systems, such as the market or the legal system. But he refuses an absolutist view on this point, suggesting instead that, "we have to think of social systems as being autonomous to various degrees."[19] Returning to his ideas about information and interference as the mediating influences between different autopoietic systems, he concludes: "The social validity of a (legal) norm can be a matter of degree. The interference of legal and social norms transforms their validity from a question of 'either-or' to one of 'more or less.'"[20] For example, he believes that direct and highly intrusive regulation may actually present problems of motivation because it engenders resistance by the regulated system.[21] On the other hand, he also concedes that the contingency and instability of self-regulation "undermines the role of law in securing expectations."[22]

By the time Teubner and colleagues tackle environmental issues directly in 1994,[23] Teubner expresses the view that law should not "try to teach from the outside. Instead, the system must be induced to produce more knowledge about itself and to reflect upon this knowledge."[24] The upshot is that "reflexive law" has increasingly distanced itself from the two critical social elements of information and interference—both of which are critical to the "democratizing legitimation" of democratic discourse as urged by Habermas, as well

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18 *Id.* at 70.

19 *Id.* at 76.

20 *Id.* at 90.

21 Regardless of whether one thinks that the new source review regulations under the Clean Air Act should be enforced as written or substantially revised, the persistent avoidance of new source review by major emitting sources over the last 20 years is an example of resistance to intrusive regulation, with the possible conclusion that the regulations are impeding rather than promoting emissions reductions.

22 TEUBNER, *supra* note 11, at 94.

23 TEUBNER, *supra* note 16.

24 *Id.* at 5.

as to effective integration of policy between subsystems such as business, science, and politics.

In the context of sustainable development, the missing social elements must be restored if reflexive "law" is to be accepted as an element of the sustainable development legal system. The critical roles of democratization and coordination help order the relationships among many social subsystems and individuals. Sustainable development, in particular, will require multiple initiatives by many different sectors of society.[25] Moreover, these multiple initiatives cannot operate reliably or with legitimacy in the absence shared information and mechanisms of social response to that information. Taking the argument a step further, the social functions of information disclosure and discourse between subsystems serve the core ideals of reflexive law because they enhance learning by all the participants and foster re-examination of (reflection on) attitudes and assumptions in all subsystems, not just the subsystem that generated the information. The benefits of these social functions for environmental policy are obvious: a fully-informed public is likely to be more aware of environmental considerations and to develop a more sophisticated understanding of them. Awareness and sophistication increase, in turn, when there are established channels for discourse within subsystems and between systems about environmental information and environmental values.

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[25] See, World Summit on Sustainable Development Plan of Implementation, advanced unedited text dated Sept. 5, 2002, available at http://www.johannesburgsummit.org /html/documents/summit_docs /2309_planfinal.doc . This Plan identifies 150 separate major tasks ranging from the sweeplingly ambitious task of "poverty eradication" to mundane details like promoting "broader use of information technology."

Reflexive Sustainable Development Law in Practice

Procedural Environmental Law

Reflexive law emphasizes procedures to change the responses of subsystems in the society. Changed responses imply changed attitudes and changed ways of making decisions, as indicated by many of the elements of sustainable development such as integration of economic and environmental decision making, public participation, and application of the polluter pays and precautionary principles. Unconsciously, several familiar elements of the environmental law landscape, some recent and some much older, have already adopted reflexive law approaches. A brief review of these will illustrate the contribution that reflexive law can make to the formulation of sustainable development law.

Several laws or systems operate almost exclusively by requiring more systematic collection of information and consideration of that information by subsystem actors in selecting among options for substantive actions or objectives. In public law, the requirement that federal agencies prepare an environmental impact statement on proposed actions under the National Environmental Policy Act (hereinafter NEPA) has been clearly defined by the Supreme Court as a strictly procedural requirement.[26] This makes NEPA quintessentially reflexive; the agency is required to study and think about environmental effects, but once the statement has been prepared, the agency is free to choose a decision that is more environmentally harmful than other options. After 30 years of experience with NEPA and thousands of environmental impact statements, commentators remain divided about how effective NEPA has been, but none suggest that it has had no effect at all. The criticisms of NEPA, rather, point to the potential value of further refinements to its procedural requirements, including more

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[26] Strycker's Bay Neighborhood Council, Inc. v. Karlen, 444 U.S. 223 (1980) (holding that "once an agency has made a decision subject to NEPA's procedural requirements, the only role for a court is to ensure that the agency has considered the environmental consequences").

demanding standards about the amount of information to be collected, tighter scrutiny of the analysis of the information, and the need for post-project monitoring of observed effects and their comparison with pre-project impact projections so that we can improve the "science" of environmental impact assessment.

On the private side of environmental law, we have a reflexive model in the recent development and implementation of a voluntary "standard" for environmental management systems for companies, the ISO 14000 series, especially 14001. This, too, is strictly procedural (and like NEPA it is criticized by some on that ground). It specifies in considerable detail the kinds of management systems companies should have in place to address environmental issues, and establishes a third-party auditing requirement to certify compliance with the requirements. ISO 14001 says nothing at all about what environmental practices a company should adopt, though it creates a strong presumption that the company will require, at a minimum, compliance with applicable regulations. Although the ISO standard lacks substantive "teeth," the expectation behind environmental management systems is that a company with a written environmental management policy, a senior officer in charge of that policy, and oversight of the policy by its board of directors is much more likely to become aware of environmental problems and to act responsibly to address them than a company that lacks such internal procedures.

Informational Law

Professor Karkkainen has studied another federal environmental procedure-only statute and shown that the development and disclosure of environmental information can, by itself, have an important effect on environmental performance.[27] The federally-

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[27] Bradley C. Karkkainen, *Information as Environmental Regulation: TRI and Performance Benchmarking, Precursor to a New Paradigm?*, 89 GEO. L.J. 257 (2001).

mandated Toxic Release Inventory (hereinafter TRI)[28] requires firms to gather (or estimate) their releases into the environment—air emissions, wastewater discharges, and disposal of wastes—of a defined list of toxic substances. They must then submit that information annually to the Environmental Protection Agency (hereinafter EPA) and to state officials, and EPA in turn is required to make that information available to the public through a computerized data base. The TRI has had a powerful effect in four ways.

First, the requirement to collect the data, which most facilities had not previously collected in a systematic way, informed the enterprises themselves of their own activities in ways that were unknown or obscure until this information was gathered. In true "reflexive" fashion, many companies then took immediate, self-initiated action to reduce their toxic releases. Karakkainen explains how some companies took enterprise "reflexion" on the TRI data further, using it within a company or even within a whole industry to establish new "benchmarks" of environmental performance, inducing further voluntary efforts to reduce the use of or release of these toxic substances.

Second, the publication of the TRI put important information into the hands of local citizens and national organizations, who were then empowered to engage the enterprises in meaningful discussions about what pollutants to reduce, and by how much.[29] This had two positive ramifications. Importantly, the community dialogue led to further reductions in toxic releases that probably would not have occurred through internal company efforts alone. In addition, though, the new channels of communication led to overall changes in the relations between the industrial facilities and their local host communities and created opportunities for resolution of other festering

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[28] The core reporting and publication requirement is in § 313 of the Emergency Planning and Community Right-to-Know Act, 42 U.S.C. § 11023.

[29] *See* William M. Sage, *Regulating through Information: Disclosure Laws and American Health Care*, 99 COLUM. L.REV. 1701, 1823 (1999) (commenting that the TRI primarily informed the already empowered (corporations) and did little to inform or empower the vulnerable.)

concerns about environmental management. For example, independent groups have compiled and analyzed the TRI data to produce maps of toxic releases by neighborhood, helping communities to identify "hot spots" and seek corrective action.

Third, the TRI informed government authorities (Congress and EPA), who used the information to revise existing toxic control programs or devise new regulatory programs or requirements for some of the toxic pollutants. The scale and variety of the toxic releases, once revealed, had a transforming effect on government attitudes toward and commitments to such programs as "pollution prevention," and led as well to fresh consideration of information disclosure as one tool to reduce public health and environmental risk.

Finally, Karkkainen describes some government programs in other jurisdictions (Canada and Massachusetts among them) that used the TRI or comparable pollutant release information systems as a springboard for additional initiatives relating to pollution reduction. In the spirit of "democratic experimentalism,"[30] these other programs have added new objectives and new features to the basic TRI model to address problems that TRI itself did not address.

Karkkainen makes a strong case for the effectiveness of information disclosure in the specific instance of the TRI and certain of its off-shoots. The question for the broader agenda of sustainable development is whether the TRI example can be extrapolated to the wider array of environmental challenges that firms and communities face, challenges that are often more subtle or diffuse in their source, or more difficult to track, or of less prominent social consequence than the release of toxic substances.

My own first judgment is that there may be some, but not many, untapped opportunities to follow the TRI model. I foresee several problems in any broader effort to use information generation and disclosure as the reflexive law "irritant" for inducing industry learning and responsive action. First, information generation is expensive, and firms will resist requirements to develop and collect

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30 *See infra* discussion in Part III.B.

information that is not vital, in their view, to either their own operations or the welfare of the community. Resistance will be especially fierce if the information could be used by competitors to understand confidential details of the facility's production or processes.

Second, there are problems (some of which Karkkainen acknowledges) in determining what information to collect and how to categorize it. Even with TRI, industry complained that public reaction to the information was ill-informed; such objections could be more telling in other situations where general public capacity to interpret the information may, realistically speaking, be limited.[31] Controversies like this show that environmental information disclosure requirements put a premium on the scarce skill of presenting complicated scientific information in an accurate and understandable way without being condescending.

Third, it can be expected that both a firm's and the public's reaction to additional information may quickly become one of either "information overload" or general indifference, so that the disclosure of the information will fail to prompt any internally-motivated or externally-forced environmental response.

"Democratic Experimentalism"

Looking beyond the narrow proceduralism of laws like NEPA and the TRI to more elaborate systems of non-regulatory environmental governance, Professor Karkkainen and his colleagues have advanced a concept of "democratic experimentalism" based on experiments in decentralized participatory decision making under the overall coordinating supervision of national environmental authori-

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[31] Moreover, industry is seeking to exclude from TRI reporting the disposal of wastes through deep-well underground injection, on the argument that this method of disposal segregates the substances from the environment and should not be considered a "release."

ties. In another article,[32] they examine several examples in which locally-based private or quasi-public groups have managed local ecosystems with greater flexibility and effectiveness than would have been achievable through formal government programs. They idealize this model in the following terms:

> These local institutions ... devise measures to monitor and assess their own performance and adjust their practice in light of actual performance. In return for this autonomy, they produce detailed reports on their plans, metrics, and performance. A central monitoring agency pools this information and makes it available to other localities and the public generally. In consultation with local actors, the central agency uses these data to periodically reformulate and progressively refine minimum performance standards, desirable targets, and preferred means to achieve them.[33]

This is a shimmering image, but it strikes me more as a fantasy than an achievable ideal. To be fair, the authors do not suppose that every democratic experiment will meet all these expectations. But if the expectations cannot be fulfilled are the experiments really suitable?

In my view, if a democratic experiment lacks any one of six key elements of the ideal, it becomes seriously flawed. My six key elements are:

> 1) suitable local methods or metrics to assess performance;
> 2) sustained local effort to obtain the data for the assessment;
> 3) sustained local commitment to and implementation of a process for adjustment of performance based on the assessment;

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[32] Bradley C. Karkkainen, et al., *After Backyard Environmentalism: Toward a Performance-Based Regime of Environmental Regulation*, 44 AMER. BEHAVIORAL SCIENTIST 692 (2000). *See also* Michael C. Dorf and Charles F. Sabel, *A Constitution of Democratic Experimentalism*, 98 COLUM. L.REV. 267 (1998).

[33] Karkkainen, *supra* note 31, at 693.

4) preparation of the "detailed reports" to the central agency;
5) central review and evaluation of local initiatives and their performance; and
6) commitment to and implementation of the process for reformulating/refining minimum performance standards, targets, and means of achievement.

Even federal agencies and large companies will have difficulty in carrying out all of the assigned tasks. How likely is it that volunteer community-based associations can meet all of these objectives? Where will they get the expert assistance they need, and how will they pay for it? Who will do the monitoring and assessment, and at what cost? Who will have the time to serve on the committees and write the reports?

The limited or partial successes the authors cite for localized governance are less than persuasive. One of their examples is the long-running Chesapeake Bay Program, a collaborative effort among the three main states in the bay watershed—Maryland, Virginia, Pennsylvania—and the District of Columbia. Twenty years of study, negotiation, action, and assessment have managed to arrest the decline of the bay. Now it limps along as a degraded ecosystem far less robust and productive than it was 200, or even 100, years ago. This is certainly a case where one might argue that the glass is half empty, not half full. Part of the governance problem through the years has been an asymmetry of interests. The states along the bay shoreline, Virginia and Maryland, are economic users of the bay and will benefit from its protection, but Pennsylvania is the watershed for most of the freshwater inflow and faces the greatest pollution control costs. Even as between Maryland and Virginia there are differences. Chesapeake Bay is absolutely vital to the economy and the identity of Maryland, but has less symbolic and economic importance for Virginia. Another problem, exemplified by Maryland, is the proliferation of hazards to the bay and the difficulty of regulating those hazards. Industrial and, to a great extent, agricultural pollution have been brought under control, but the last 20 years have witnessed an explosion of population and second-home development in

Maryland's Eastern Shore that has set back much of the bay restoration effort.

Stephen Nickelsburg makes a strong argument that there are clear and not very distant limits to what can be expected of community volunteer efforts.[34] Nickelsburg cites the work of a well-known researcher of community-based environmental governance, Elinor Ostrom, who has deduced a set of conditions for the success of local self-governance. Among the factors she identifies are: a common judgment that the interested parties will be harmed if they don't develop a new approach, relatively low information and enforcement costs, and shared "generalized norms of reciprocity and trust that can be used as initial social capital."[35] Such situations exist in small, relatively isolated, and relatively homogeneous communities with relatively simple economic structures tied closely to environmental conditions, and Nickelsburg describes some hopeful examples with those characteristics. But those conditions are not readily replicated. Even if one counts the Chesapeake Bay Program as a success, other important bays with simpler political economies involving only one state, such as San Francisco Bay, Galveston Bay, and Massachusetts Bay, have not germinated the same deep and sustained regional involvement.

I reach my cautiously pessimistic conclusion about democratic experimentalism with reluctance. Public participation is an essential ingredient of environmental policy, now appropriately enshrined as one of the principles of sustainable development in the Rio Declaration of 1992 and given more substantive international stature with the coming into force of the Aarhus Convention on Public Participation in Environmental Decision Making.[36] Because most

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[34] Stephen M. Nickelsburg, *Mere Volunteers? The Promise and Limits of Community-Based Environmental Protection*, 84 VA. L. REV. 1371 (1998).

[35] *Id.* at 1379.

[36] UNECE Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters, ECE/CEP/43, 38 I.L.M. 517 (1999) (adopted at Aarhus, Denmark on June 25, 1998, entered into force Oct. 30, 2001).

environmental harms arise out of complex circumstances to which most of us contribute in small ways, community involvement of some kind is essential to effective environmental management. The law should do everything it can to promote, foster, and facilitate the involvement of the public at large, and especially the local community most directly affected, at every stage, from identifying problems to setting environmental protection or improvement objectives to monitoring and enforcing the targets and the plans. But it is one thing to advocate that the public participate in a structured process overseen, if not managed or directly instigated, by governmental authorities. It is quite another to suggest that the public, or the community, can and should regularly become the manager itself.

Karkkainen and his colleagues are not insensitive to some of the problems their model presents. They particularly address what they call the "challenge to Madisonian arrangements" from democratic experimentalism. The local groups mix public officials with private parties in the exercise of broad powers, blurring the lines between the branches of government and also between public and private spheres of action. A cautionary tale about the risks involved comes in a case involving the protection of the Niobrara River, a wild and scenic river in Kansas and Nebraska. Although the river itself was under the jurisdiction of the federal government, all the abutting land was privately owned. Protecting water quality and stream flow in the river depended, then, on the cooperation of the landowners. Not surprisingly, the Department of the Interior not only sought the views and engaged the cooperation of local farmers in managing the river, but to encourage and bind their cooperation it ceded to the farmers substantial authority to make decisions affecting the river, checked only by the power of the government to abrogate the arrangement. In a case brought by a national environmental organization, however, the court held that the government had created an impermissible delegation of public authority to private individuals.[37]

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[37] National Parks and Conservation Ass'n v. Stanton, 54 F. Supp. 2d. 7, 20 (D.D.C. 1999).

To my way of thinking, the court in the Niobrara River case reached the correct result. Even where local interests are the ones most substantially affected by environmental management decisions, and even though their views should be given great weight and their participation in the management process encouraged, at the end of the day the protection of the environment, even locally, is a matter affecting the public welfare of the nation as a whole, indeed the world. Some public entity with a perspective and a legal responsibility of broader sweep should maintain final decision-making authority.

A Ten-Point Working Hypothesis on Reflexive Law for Sustainable Development

The preceding parts of this essay have set forth the basic principles of reflexive law and their pertinence to the sustainable development enterprise. They have demonstrated, too, that reflexive law approaches have already been applied in United States environmental law, albeit serendipitously rather than by conscious reference to the theory. Though reflexive law analysis focuses on important and often neglected dimensions of environmental policy, the practical experience with reflexive environmental law also shows suggests the limits of the approach and the pitfalls of trying to apply it in inappropriate contexts. Substantive, purposive environmental law—yes, command-and-control regulation—still has a vital role, especially in helping to achieve the sweeping economic, social, and environmental agenda implicit in "sustainable development." The following ten propositions summarize the conclusions that I draw from this analysis.

Point 1: Reflexive law instructs us to think about social subsystems and how they interact. Looking through the reflexive law lens, we can see that many environmental laws—and the public debates about their possible reform—idealize or privilege one or more subsystems and thereby threaten to create a tyranny of the normative logic of that subsystem. Some laws imagine that "science"

should determine policy, idealizing scientific validity or scientific justification as a normative value. This leads to the tyranny of experts and their data and the empowerment of the scientific subsystem, which cannot be effectively judged by non-scientists. This idealization of science provokes endless and ultimately fruitless debates about what constitutes "sound" science or whether science "alone" should define our environmental goals. Some laws, or advocates for environmental law reform, idealize economics as the normative subsystem. This threatens the tyranny of economic efficiency or, in the public sector, quantified cost-benefit analysis. The idealization of economics by the political right is matched by the idealization of community and democratic choice on the left. The autonomy of Athenian-style democracy symbolizes the normative goal, validating the tyranny of local control. Community is vital; culture and society is the important third dimension of sustainable development. But too localized a conception of community leads to incoherence in environmental policy. Sustainable development demands holistic thinking and, ultimately, global strategies.

Point 2: In their idealized forms, each subsystem depends on perfect information and unimpeded communication of that information within the subsystem to reach its ideal condition. Economics assumes the perfectly-informed market participant and often ignores transaction costs. Idealized ideas of science assume that science can provide singular "answers" about which all scientists will agree. The ideal of democracy rests on the expectation that each citizen will be or can be informed about the decisions to be made and that the decision will be reached through a Habermasian process of honest and open dialogue and unconstrained choice.

Point 3: Perfection of information and perfection in its communication are unattainable objectives, so none of the idealized solutions are valid. Legal structures that rely on assumptions of perfection within the relevant subsystems cannot achieve their intended goals, and may in some cases lead to contradictory or erroneous outcomes. Theorists within each subsystem acknowledge

the problem and strive to understand how their discipline performs in the absence of perfect information. Nevertheless, mechanisms for dealing with uncertainty, ambiguity, and inequity in the distribution of information are poorly developed in both theory and practice. Environmental laws that focus on the further development of information and its communication represent one attempt to overcome the imperfections of science, economics, and politics.

Point 4: As a corollary to points 2 and 3, we must accept that information and its communication are not perfectable. Realistic political choices and realistic legal systems should be built on the premise of the persistence of imperfection in each of the subsystems.

Point 5: Having acknowledged in point 4 that no one subsystem—be it economics or science or the democracy of local community—can be relied upon to direct our social choices about sustainable development, we can appreciate the value of mechanisms that integrate thinking, that promote or even demand communication between subsystems before decisions are made. Sustainable development law should foster integrated policies that draw on elements of all three subsystems, and indeed on inputs from other subsystems as well. This means an emphasis on procedures and systems that promote interaction among the subsystems and adaptation to new information.

Point 6: The interdisciplinary approaches we need—which are, emphatically, integrated approaches built on subsystem imperfections—will themselves be imperfect in the sense that they will tend to represent unstable compromises among competing systemic methods and values and social aspirations. Typical unstable compromises in environmental policy include:

a) Rules that insist on national uniformity, and therefore sacrifice some element of economic efficiency, scientific validity, and/or community choice.
b) Rules that are either stricter than science warrants,

typically in reaction to community concerns, or not strict enough to address the environmental problem, usually in response to economic concerns.

c) Rules that privilege local choice even in the face of inadequate or spotty local effort to control well-defined environmental harms.

Point 7: Reflexive law theory can help us to construct legal structures and mechanism to enhance the performance of these imperfect, unstable systems, because reflexive law has two major objectives relevant in this context—to improve the capacity and performance of the system to generate knowledge about itself and its effectiveness, and to stimulate (the theorists sometimes say, to "irritate") the system to reflect on this information and reform itself.

Point 8: The approach laid out in the first seven points is highly unsatisfactory. It is theoretically inelegant, a pastiche of reflexive law and substantive law that looks to Habermasian discourse but denies that such discourse can be fully realized. It is messy; that is, it will—indeed should—result in a jumble of ad hoc strategies for differing situations. It is incoherent, in the sense that there it offers no systematic criteria for choosing one approach over another, no firm basis for any overarching consensus, and no prediction about environmental outcomes.

Point 9: In spite of its unsatisfactory character, reflexive law has two saving graces that are particularly appropriate for sustainable development, which itself is incoherent, unpredictable, insufficiently rigorous, and theoretically inelegant. First, it is adaptable to the variability and complexity of environmental problems. Its incoherence and unpredictability, which are weaknesses for any of the details in a system of laws, become cardinal virtues at the general level because sustainable development is about adapting human society to dynamic changes in the natural world, the capabilities of human technology, and evolving social values. The second saving grace of reflexive law is that it has a good chance of being perceived

as politically and socially legitimate precisely because it calls for integration and compromise among disputed and often competing social objectives. Reflexive law focuses on procedure and communication, which are the essential ingredients of legitimate decisions about law in democratic societies.

Point 10: Contrary to the observations of some reflexive law sociologists, I judge law and politics, at least in democratic societies, to be among the most open, integrative, communicative social subsystems. Sustainable development policies will have pervasive reach and effect, and so need a blend of politics and law. Law and politics, in turn, require inputs from three other broad subsystems—science, economics, and a more amorphous system that I will call, for now, "the community." For me, this suggests a definite role for law in general, and for public or positive substantive law in particular, in channeling the actions of government and of private parties toward the achievement of sustainable development.

Conclusion

In closing, if reflexive law theory reintroduces missing elements of within-system democratization and between-system coordination, it can become an instructive and constructive legal theory for sustainable development. Its emphasis on learning, reflection, and relatively unconstrained adaptation fits nicely with the environmental policy need for improved collection of data, consideration of alternatives to current or planned actions, and timely, flexible response to ecosystem dynamics and ever-changing environmental awareness. Its emphasis on systems approaches and coordination among systems reinforces the need to improve our legal approach to environmental problems by encouraging multimedia evaluation of pollution and ecosystem analysis of both pollution and other changes to natural systems.

Nevertheless, there is a strong tendency in the reflexive law literature to ignore democracy and social discourse. In its narrowest definition, reflexive law can be challenged as deficient in legitimacy

because it may lead to decisions by one subsystem, such as private businesses, without adequate opportunities for participation by the community at large. More broadly conceived, though, reflexive law appropriately emphasizes the need for attention to procedural formalities that promote communication and inform those who make final decisions so that those decisions are made reflexively—that is, with thought about how those decisions are likely to affect the very people and systems that are making the decisions and with the capacity to respond to feedback from the system. So long as system coordination is properly understood to include exchange of information and interaction between and among different social systems, specifically including all levels of government and affected non-governmental individuals and organizations, reflexive law reinforces democratic participation and the opportunity for environmental policy to incorporate important non-scientific values into the environmental protection side of sustainable development and important non-economic values into its human development side.

Sustainable development cannot succeed without robust systems of democratic governance emphasizing freedom of choice and the emergence of collective interests out of patterns of discourse and behavior of autonomous individuals. Reflexive sustainable development law needs to avoid the strict constraints of Teubner's autopoietic variant and embrace the Habermasian discursive democracy features of Teubner's own original concept. Even with information and interference systems in place, reflexive law approaches, by themselves, do not offer a complete legal context for sustainable development, as Teubner himself would be the first to admit. Reflexive law will always need to be supplemented with substantive law determined through legislation and regulation by public authorities, which alone can legitimately express the integrated values of the society and the specific goals to be established in pursuit of those values.