

Participation and Agency: Hybrid Identities in the Making of Green Knowledge¹

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Technology has become the great vehicle of *reification* – reification in its most mature and effective form. The social position of the individual and his relation to others appear not only to be determined by objective qualities and laws, but these qualities and laws seem to lose their mysterious and uncontrollable character; they appear as calculable manifestations of (scientific) rationality. The world tends to become the stuff of total administration, which absorbs even the administrators.

Herbert Marcuse, *One-Dimensional Man* (1964: 168-169)

1. Introduction

In the course of the 1990s, the ideas and practices of environmentalism tended to lose whatever politically mobilizing force they might earlier have had, and largely came to resemble what Herbert Marcuse, in his classic text of the 1960s, termed the pure stuff of administration. The redefinition of environmental politics as an ambiguous quest for sustainable development can be seen as a form of reification, bringing environmental politics under the control of the established order and its administrative apparatus and making environmental problems amenable to the objective and instrumental procedures of

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technological rationality. What had seemed for many of us in the late 1970s to be a broad, social movement out to save the planet from further environmental destruction and ecological deterioration has given way to a much more amorphous, and socially acceptable political agenda and range of practical activity. The “environmental movement” has been effectively stripped of its underlying human meanings and motivations and instead transformed into institutions and professions; and the ideas of political ecology and the practices of appropriate technology have become a fragmented array of institutional, intellectual and practical activity, what I have termed the “making of green knowledge” (Jamison 2001). This paper is an attempt to explore some of the cultural dynamics of these transformation processes in terms of the human agency that have been involved in this multifarious shift in political agenda and practical focus.

At the level of discourse, the ideas of environmental protection, or, as they have come to be redefined in the 1990s, sustainable development, have more or less taken on a largely ideological or rhetorical character or function. In the northern European countries, where the environmental movements of the 1970s were among the most visible and politically significant of any in the world, environmental ideas have become deeply embedded in the language games and discourse coalitions that have been characterized as ecological, or reflexive modernization (Hajer 1995). Within national governments in Germany, Great Britain, the Netherlands, and the Scandinavian countries, as well as at the European Commission, the dominant policy doctrines have been framed in the terminology of business management, and there has developed a repertoire of so-called market-oriented environmental policies that, among other things, attempt to encourage private companies to develop “cleaner technologies”, institute environmental management and accounting systems, and devise strategies for “green product” innovations (Carter 2001).

When it was first formulated in the 1980s, sustainable development was seen to represent a new approach to environmental politics that was cooperative and constructive, by which environmental concern was to be integrated into all other areas of social and economic life. As formulated in the so-called Brundtland report, *Our Common Future* (WCED 1987), sustainable development was seen to necessitate the combination of environmental protection with economics and management, and as such, develop appropriate methods and techniques for measuring, assessing and accounting for the environmental and resource implications of production and consumption patterns, communication and transportation infrastructures,

educational and welfare programs, and even social and political interaction. Environmental politics, the report contended, needed to embrace and eventually encompass the entire range of social and economic issues, and there was a need for everyone to be involved, to *participate*.

In the course of the 1990s, the meanings of the term – and of the ideas of environmental politics more generally - gradually shifted from the visionary to the mundane, or, as Karl Mannheim (1948/1936) once put it, from the utopian to the ideological. Whereas a utopian vision “orients conduct towards elements which the situation, in so far as it is realized at the time, does not contain” (ibid: 176), an ideology, at least for Mannheim, is a more closed and exclusive set of ideas. Ideologies serve to systematize and provide a sense of order – imputing an underlying logic for a set of ideas – whereas utopias are inherently something quite different, serving at best to inspire or encourage the imagining of alternative “logics” and possibilities, and at least questioning the dominant and socially-accepted logic, or forms of rationality (Eyerman and Jamison 1991). History is rife with recurrent shifts from utopia to ideology, from the visionary to the realistic, from the imaginary to the scientific, and it is perhaps helpful to view the discursive journey of environmental politics as yet another closing in of the visionary, and a narrowing of the collective imagination.

That discursive journey can be traced from the visions of the early 1970s – the programmatic report to the UN Conference on the Human Environment in 1972, *Only One Earth*, jointly authored by an economist, Barbara Ward and a biologist, Rene Dubos; the manifesto-like *Blueprint for Survival* that launched the journal *The Ecologist*; and perhaps especially the widely-read *Limits to Growth*, which brought to the world’s attention the startling results of computer-based prognostications of patterns of resource and energy use - to the intergovernmentally negotiated agreements of the 1980s and 1990s – the Kyoto protocol and, not least, the Agenda 21, the document that emerged from the UN Conference on Environment and Development in Brazil in 1992.

In the world of public policy, the open-ended and all-encompassing visionary thought of the 1970s – the “care and maintenance of a small planet” as Ward and Dubos had put it in the subtitle of their book - has, in the course of the journey, been broken down into sectorially separated and specific programs and projects – sustainable technology development, ecological agriculture, green product innovation, industrial ecology, sustainable transport,

energy efficiency, etc. In the rarefied world of academic thought, new-fangled “green political theorists” have devoted many a book-length treatment to elucidating the interrelationships between the various components of environmental politics and the standard political grammar of justice, power and democracy (e.g. Dobson 2000). Indeed, in the course of the 1990s, all the academic disciplines – from history to sociology, from biology to physics – have been encouraged on numerous festive occasions to consider their “role” in contributing to an understanding of sustainable development and in making their particular science and sometimes even science in general more sustainable. And among influential politicians and their expert advisers, sustainable development has come to be embedded in the emerging language of *governance* and *deliberation*, suggesting that what is required if societies are to be sustainable is nothing less than a whole new way of thinking about politics, which can transcend the cleavages of class and nation: a new ideology “beyond left and right” (Giddens 1994).

On a practical level, the various activities that have been associated with, or characterized by, a desire to bring about more sustainable paths to social and economic development have largely left behind the space of civil society, or the wider “public sphere” where social movements are to be found, to enter instead into the rather more circumscribed confines of public administration and corporate management. The poorly funded and loosely organized activities of the 1970s have tended to give way to more formalized and well-subsidized projects, at the same time as those taking part in what might be termed the quest for sustainable development have tended to assume more narrowly-defined professional and/or vocational identities. In the 1970s, “participation” in regard to environmental politics was for many people a primarily voluntary activity, a matter of individual commitment and personal engagement, in large measure a means to express one’s sense of civic, or public concern in relation to one or another environmental problem or project. Whether driven by fear and foreboding for the future or by a sense of solidarity with the non-humans with whom we share the planet, the emerging environmental consciousness, as in many if not all social movements, allowed disparate individuals to find common cause in a public space of their own creation (Eyerman and Jamison 1991).

By the end of the 1990s, that movement space had largely disappeared, and there had emerged instead a range of new, more delimited spaces, or arenas in both the public and private spheres – corporate departments of environmental management, administrative offices of

sustainable development, entire industrial branches of renewable energy, even green think tanks, such as the Wuppertal Institute in Germany - which fundamentally altered the conditions of participation. Thereby, both the possibilities for directly taking part *in* one or another activity, as well as the opportunities for feeling oneself to be a part *of* environmental politics, became more limited. There was a transition, in other words, from a kind of open-ended process by which environmental politics had formed a social movement's underlying "collective identity" to a more enclosed set of discourses and practices that were organized largely in the form of externally-funded projects, which had meaning more or less only for those directly involved in them, or who had a direct interest in them, often of a commercial nature.

In the following, I want to identify some of the main agents, or forms of agency, that have been involved in this process of cultural transformation, as I have come to recognize them in the course of my own recent research in Europe. The agency that seems particularly significant in the making of green knowledge, the cognitive dimension of environmental politics, is what can be characterized as mediation, either bringing people together (networking), creating communicative or deliberative spaces (facilitation), or transferring ideas and practices from one place to another (interpretation).

What is involved at the personal level is often a process of hybridization, or hybrid identity formation, which is remarkably similar to previous periods in history, when emerging ideas and practices struggled to win acceptance and support. Both the so-called scientific revolution of the 17th century, and the emergence of socialism in the 19th century involved similar processes of hybridization and hybrid identity formation, by which ideas and practices that had developed in social movements were taken over, or *appropriated* by the broader culture (Hård and Jamison 2003). My reflections are based, in large measure, on two projects supported by the European Commission: PESTO, or Public Participation and Environmental Science and Technology Policy Options, which I coordinated from 1996 to 1999, and TEA, or the Transformation of Environmental Activism, coordinated by Christopher Rootes from 1998 to 2001, for which I served as the Swedish partner.²

² PESTO included research teams in Denmark, Italy, Lithuania, the Netherlands, Norway, Sweden, and the United Kingdom; while TEA included teams in France, Germany, Greece, Italy, Spain, Sweden, and the United Kingdom.

2. A Cultural Approach to Participation

In the PESTO project, we made use of an analytical framework, by which the relations between various actors and institutions involved in the world of environmental science and technology policy-making are conceptualized in terms of ideal-typical categories of “policy cultures”, or policy domains.³ Each culture has its own particular principle, or overarching policy perspective, as well as its own favored approach or policy style: its particular way of doing things. Each culture also has its own characteristic ethos, or value system, which helps give shape to the ways that policies and programs are implemented and carried out in practice. The framework has been developed in order to be able to explore dimensions, or aspects of policy making that are seldom examined explicitly, namely the various “cultural tensions” that come into play, as those who represent, or embody, the different perspectives and value systems enter into interaction and negotiation with one another. Policy-making, according to this approach, is seen to be based on a conflict of interests among different “actors” and their institutions and recognizes the importance of transcending, or resolving those conflicts through processes of mediation and negotiation in the making of policy decisions (figure one).

Figure One: Cultural Tensions in Policy Making ⁴			
Policy Culture			
	State	Market	Civil society
<i>Principle</i>	social order	economic growth	public accountability
<i>Style</i>	formal	entrepreneurial	personal
<i>Ethos</i>	bureaucratic	commercial	democratic

The PESTO project consisted of three main stages, or work-packages, as they are called in the language of the European Union. First, we described the historical development of environmental science and technology policy in our respective countries, with a particular

³ This conceptualization was developed in earlier research with Erik Baark and Aant Elzinga. The findings of the PESTO project have been presented in the final report (Jamison, ed 1999).

⁴ In the analytical model that we used in the PESTO project, we referred to a fourth culture, or domain, the academic, which is not relevant for the discussion in this paper.

emphasis on the ways in which the general public had been involved, or allowed to participate, in policy-making processes (Jamison and Østby, eds 1997). In our historical accounts, we found interesting differences among our sample of countries: in Sweden and Britain, for example, public participation was much less conspicuous and explicit than it had been in Denmark and the Netherlands, both in terms of the “theory” and the “practice”, the ways in which it was talked about and the ways in which it was carried out. The Netherlands and Denmark had produced a number of innovative procedures in the name of public participation in environmental science and technology policy – science shops and state bodies for technology assessment, for example – while such innovations had been absent in Britain and Sweden. Similarly, the academic investigation of participatory approaches to science and technology policy was an area of some significance in Denmark and the Netherlands, while in Britain and Sweden, there had been far fewer studies and far less opportunity for such research to be conducted. In Sweden and Britain, the education of scientists and engineers was relatively free from any social or cultural ingredients, while in Denmark and the Netherlands, engineering students were exposed, as part of their normal educational experience, to courses in science, technology and society, or the history of technology, or environmental studies. There had thus developed, in Denmark and the Netherlands, somewhat more appropriate institutional and intellectual frameworks for making participation happen when the doctrine of sustainable development was articulated in the late 1980s (see Jamison et al 1990 for details on the emergence of environmentalism in Denmark, Sweden and the Netherlands).

Our second work-package was an attempt to explore the relations between public participation and environmental science and technology policy through case studies in the different countries. We wanted to investigate some of the specific forms that participation had taken in somewhat more detail, by focusing on particular themes: the role of non-governmental organizations, local Agenda 21, sustainable transport, the role of entrepreneurship in environmental science and technology policy (Jamison, ed 1998). The general ambition was to problematize public participation by studying it in different contexts, so that we might be better able to characterize some of the underlying conditions that were at work in the various activities. The transformations within environmental organizations – from the “protest” organizations that had been so active in the movements against nuclear energy in the 1970s to the more complex and variegated division of labor that characterized environmental activism in the 1990s – was especially noticeable. In the TEA project, we

discovered that this was a more general process that had characterized environmental activism across Europe, and, indeed, in North America as well: a process of institutionalization or normalization (Diani and Donati 1999).

In the PESTO project, our third work package focused explicitly on networks of environmental management, both in the private sector, and in the academic world, and not least in the emerging space of academic-industrial interaction. By interviewing a wide range of people active in these networks of ecological modernization, or green business, wanted to increase our understanding of the types brokerage, as we called them, that took place within the networks. What was actually taking place, in terms of mediating, facilitating, and interpreting, that is, in terms of human agency?

This kind of research is somewhat different from the dominant forms of research in the social sciences. I have come to characterize it as “action-oriented” in that it is problem-driven rather than discipline-driven, and focuses on ongoing processes in the making. Its findings thus take the form of intersubjective insights rather than objective facts, lessons that can be learned from different examples rather than “iron laws” that have a universal validity. More specifically, what research like PESTO and TEA can help understand are the conditions that make participation possible, the kinds of contingencies and contextual factors that appear to be necessary for participation to have some cultural significance, or meaning, however small or fleeting that might be (see figure two).

**Figure Two: Some Conditions for Participation,
according to the PESTO project**

- spaces for interaction across societal domains
- processes of communication across “discourses” and disciplines
- enlightened civil servants
- organizational bridge-builders
- political support “from above”
- mobilization of traditions “from below”

On the one hand, we discovered the crucial need of new sorts of public spaces, or, perhaps better, social interfaces, where interaction could take place across the domains or policy cultures. Such social interfaces, as the cross-ministerial Sustainable Technology Program in the Netherlands, the agencies of technology assessment associated with national and regional governments, the local Agenda 21 offices in many municipalities, and, not least, the ad hoc projects and networks that have been created to deal with specific issues, all provided opportunities for participation. Secondly, there was a need for communication and cross-fertilization across disciplines and “discourses”. The spaces had to be filled with meaning, with projects and interactive workshops and conferences. Lay people and experts, bureaucrats and businessmen, needed to be brought together into communication and dialogue: the image of the roundtable, and the notion of “stakeholder dialogue” were recurrent aspects of the participatory activities that we studied (see also Fischer 2000).

In most of the projects of public participation that we investigated, we also noted the importance of support both from “above” and “below”, that is, the importance of top-down initiative meeting bottom-up engagement. The quest for sustainable development, as we came to understand it in action, seems to require the active involvement of some centrally placed public authorities – whom we can think of as enlightened civil servants – as well as a receptive local base of support. People cannot be forced to participate in environmental politics. It seems that, for participation to happen, they need to feel that their participation contributes to, or is connected to, some other political project. The enlightened civil servants are important as promoters of social innovations, they serve to translate a new approach or method or concept into the relevant public (or private) context. In the making of the so-called Infralab, or Infrastructural laboratory in the Netherlands, for example, where local citizens are brought into the decision-making processes around new transportation projects, it was an official at the Ministry of Transportation who realized that things had to be done differently: a new structure was called for if the concerns of the public were to be taken into account. In the “green guides” program in Denmark, as well as in other projects of urban ecology that were instituted in the 1990s by the Danish government, civil servants in the Ministry of the Environment were given the task of making participation happen. It was necessary for public officials to break out of their normal routines: to innovate, think differently and envision new possibilities. Enlightened civil servants, often together with people who work for a non-

governmental organization, have served to bring a kind of professionalism, and often crucially valuable official connections, into a wide range of projects.

At the same time, there need to be bridge-builders, people who can facilitate interaction and catalyze processes of communication across the various social divisions and boundaries. In the quest for sustainable development, there are particular combinations of competence that are called for - linking natural science and social science, engineering and empowerment, ethics with economics, and, not least, environmental concern with professional management.

In the contemporary world, this knowledge-making is increasingly being taken on by campaigning organizations or ad hoc networks, which have been established for particular campaigns or events, in order to address particularly pressing global environmental issues. They tend to operate within particular sectors or interest areas. There are climate action networks and climate change panels, renewable energy networks and intergovernmental programs, organic agriculture networks, ecological design networks, as well as environmental justice networks. In many cases, the networks bring together people working in professional organizations and institutions with local activists and personal environmentalists. The difficulty is in sustaining these kinds of networks and temporary activities, and keeping them from being taken over by the large, transnational NGOs, such as Greenpeace or the World Wildlife Fund, or, for that matter, by business firms and their networks, such as the World Business Council for Sustainable Development.

3. The Forming of Hybrid Identities

In cognitive terms, what seems to be involved in the quest for sustainable development is the making of new forms of knowledge, what I have come to characterize as green knowledge. Like the new mode of knowledge production that has been identified by Michael Gibbons and his collaborators (Gibbons et al 1994), green knowledge is often carried out in networks rather than traditional scientific disciplines, and it tends to be organized in ad hoc, or temporary projects rather than in more traditionally-defined research programs, or the puzzle-solving paradigms of what Thomas Kuhn so famously termed “normal science” (Kuhn 1962). Green knowledge is usually produced in relation to specific contexts of application, or action, and thus takes its point of departure in problems with which the researcher feels a sense of

engagement; it is rarely the disinterested kind of inquiry that Robert Merton once characterized as central to the modern scientific enterprise (Merton 1973). Like many other new fields of knowledge production in the contemporary world – genetic engineering, gender studies, nanotechnology, cognitive science, cultural studies – green knowledge also involves the formation of a number of “hybrid identities” or emergent social roles, which bring together types of competence and expertise that have previously been separated from one another. In this sense, environmental politics embodies, or is grounded in, a new kind of synthetic, or synthesizing cognitive praxis, which brings different kinds of insights and expertise, interests and competencies, methods and experiences together into new combinations.

In the following, I want to describe some of these hybrid identities by briefly telling the life stories of some of the people I have come across in the course of my recent research. Each story is meant to illustrate one exemplary type of hybrid identity. There are certainly other ways to talk about these matters, but it seems to me that if we are to grasp the cultural significance of sustainable development, we must at least in part begin to identify what is going on at the personal level (figure three).

Figure Three: Hybrid Identities in Sustainable Development

Networkers

- horizontal e.g. Johan Schot (Greening of Industry)
- vertical e.g. Jacqueline Cramer

Translators/interpreters

- transdisciplinary generalists e.g. Fritiof Capra
- public intellectuals e.g. Arne Næss

Facilitators

- consensus-makers e.g. Lars Klüver (Danish Technology Board)
- social innovators e.g. Robin Grove-White

Brokers

- product champions e.g. Donald Huisingh
- project managers e.g. Karl-Henrik Robert (Natural Step)

Obviously, the types of identity are not mutually exclusive, but they do require somewhat different kinds of competence and expertise in order to be carried out effectively. They also require a congenial cultural climate for providing opportunities for hybridization and combination.

Johan Schot, trained as a historian of technology at the Erasmus University in Rotterdam, and one of the first people in Europe to work as a consultant in the field of environmental management and cleaner technologies, is a good example of a horizontal networker, that is, a person who works across the policy cultures, or domains in his or her networking activity. Throughout his career, Schot has combined his various interests in creating networks and projects that have been influential in the quest for sustainable development. He was one of the co-founders of the Greening of Industry network, which has organized a series of international conferences and workshops, where academics, business people, government officials and environmental activists could exchange experiences and discuss the various elements of industrial environmental management and sustainable technological development. Schot's hybrid identity includes an organizational competence, as well as particular intellectual components that have been put together into new conceptual and methodological combinations.

Where Schot's networking activities – first GIN and more recently the European history of technology network, *Tensions of Europe* – have tended to be horizontal, in bringing people together from different countries and different professions, vertical networking often involves a different kind of hybrid identity formation. People who work as environmental managers or environmental accountants within particular organizations or companies are good examples of the ways in which an environmental or biological expertise is being combined with a managerial or organizational expertise. Schot's former colleague, Jacqueline Cramer, who has helped the Dutch firms, Unilever and Philips, establish environmental product policies, has combined her education in ecology and her personal background as an environmental activist with communicative and educational skills in her particular form of “vertical” networking. What is central to the vertical networking identity is the carrying of one or another sort of environmental competence into unfamiliar territory, the bringing inside of knowledge that was previously considered to be outside, even foreign, to the particular organization or company, and then devising ways to institutionalize that green knowledge.

The translators, or interpreters, are more like what Mannheim once termed free-floating intellectuals, in that they are often people who combine ideas from different academic disciplines or fields of knowledge and struggle to retain their independence from formal, or established institutions. The physicists-turned-environmentalists - Amory Lovins, Fritiof Capra, and Vandana Shiva – are good examples of this kind of hybrid identity, applying their trained competence in generalization and abstraction to the world of environmental politics. It is a kind of generalist identity, making explicit, as Capra puts it in the title of his most recent book, the “hidden connections” between different fields of knowledge (Capra 2002). Ecological philosophers, such as the Norwegian Arne Næss, who coined the term deep ecology, is another example of the interpreter, bringing a way of thinking – philosophical, reflective, “deep” – into other life-worlds and other contexts than it is usually found. In the 1970s, Næss left his university post to become a “movement intellectual” and took part in some of the direct actions of civil disobedience that were carried out in Norway in relation to the exploitation of the northern rivers for hydroelectric power. Like the generalists, Næss has continually performed his expertise, or displayed his competence in public.

Throughout Europe, we find the mediators and facilitators at the new arenas that have been established at the boundaries, or interfaces, of the different policy cultures. A good example of a consensus builder is the Dane Lars Klüver, long-term director of the Board of Technology, which has become well-known for its consensus conferences that are organized on a regular basis, bringing lay people together to discuss political issues with relevant experts. Such participatory technology assessment, as it is sometimes called, requires a kind of hybrid between an engineer or natural scientist (biologist in Klüver’s case), on the one hand, and a politician (Klüver, like many of his counterparts in other European countries, was an active member of environmental organizations before moving to the Board of Technology).

Facilitation can also be carried out by hybrids within already established institutions – at universities, public agencies, environmental organizations, consulting firms. The strengthening of what the American political scientist Robert Putnam has termed “bridging social capital” has been particularly important in such contexts as local Agenda 21 activities, where local governmental authorities throughout Europe have often established temporary offices for mediating purposes. Like the forms of networking mentioned earlier, social innovation requires organizational skills and social competence, along with a range of

experiences from working in different settings. In many of the local Agenda 21 projects that we investigated in the PESTO project we found social innovators, and we also found them at many a university, where new programs in environmental management or environmental ethics are being established. The career trajectory of Robin Grove-White, who, in the 1970s and 1980s worked within a large environmental organization (the Council for the Protection of Rural England), and then established the Center for Environmental Change at Lancaster University, and now serves as chairman of British Greenpeace and a member of the British Forestry Commission, is a good example of this kind of hybrid identity: a man of all trades, as it used to be said, but master of none.

The final categories of our typology are more specialized; these are, we might say, the promoters, or even the salesmen, of sustainable development, managing the projects and marketing the products, and generally taking the economic and personal risks that have long characterized the entrepreneur. Karl-Henrik Robert, the Swedish medical doctor turned environmental management consultant, who created the organizational and business concept, The Natural Step, illustrates one kind of entrepreneurial hybrid. As in the case of scientific popularizers, Robert's particular skills are in the arts of simplifying and operationalizing complicated ideas. The hybridization in his case refers to the combination of the popularizing sensibility with a commercial, or business mindset. One finds something similar in the promoters of the key concepts of environmental management, or green business. In Donald Huisingh, the entrepreneur of pollution prevention and cleaner production, who established the Cleaner Production Roundtable and serves as consultant to many companies and university programs in environmental management, one finds the engineer and the ideologue in a kind of symbiosis; the hybrid identity recombines the technical interest of the engineer with the passion and enthusiasm of the politician.

4. Conclusions

The making of these and other hybrid identities in relation to green knowledge is certainly not seen by all people as something intrinsically positive or progressive. What has become especially significant over the past few years, in North America and Europe alike, is a kind of anti-environmental backlash, a mobilization of reaction against environmental politics in general and some of the specific forms of green knowledge making in particular. In Europe,

the process has been most painfully visible in Denmark, where a neo-liberal government took office in 2001 and immediately began to eliminate the opportunities for environmental scientists and politicians. Many people were fired from the public environmental administrative authorities, and many of the innovative programs of the previous, Social Democratic-led government were disbanded, perhaps most dramatically the support to wind energy and the so-called Green Fund, which had sponsored a large number of locally-based projects in sustainable development. To replace the green experts, the Danish government established a new institute of environmental assessment, headed by the self-proclaimed environmental skeptic, Bjørn Lomborg, who has achieved fame and fortune by challenging the claims of green knowledge by making use of the traditional technique of cost-accounting, so that the Danish people, as he often puts it, can get “more environment for their money” (see Jamison 2002).

This backlash, similar in many ways to the behavior of the Bush administration in the United States, alerts us to the fragility of green knowledge and the difficulties in retaining and consolidating the hybrid identities that have been formed. To borrow a terminology that was used by Raymond Williams in the 1970s, we can characterize the making of green knowledge as involving a cultural political struggle on two fronts: on the one hand, against a dominant cultural formation that seeks to incorporate the new ideas and practices into its own scientific and professional modes of operation – into green business – and, on the other hand, against residual cultural formations, such as the reactionary forms of populism that have become so influential in America and Denmark, which seek to reject green knowledge in the name of traditional belief systems and ways of life (Williams 1977).

While the dominant culture operates on a transnational, global scale with commercialization and professional scientific knowledge as the main ingredients of its cognitive praxis, residual cultures resist green knowledge by reinventing traditional ideologies and techniques: in Denmark, the ideology of rural populism and the techniques of the tight-fisted accountant. It is in between these poles of opposition that one finds an emerging ecological culture of green knowledge making, where hybrid identities and exemplary learning are the main cognitive components. It remains to be seen if this emerging culture can survive, and indeed reproduce and sustain itself, or whether the processes of incorporation and reaction that have been so prevalent during the past few years will succeed in appropriating or rejecting the ideas and practices of green knowledge. By clarifying some of the aspects of human agency that are

involved in environmental politics, and by specifying, as I have tried to do here, something of the cultural dynamics of green knowledge-making, it might be hoped that the emerging ecological culture will at least gain a somewhat clearer sense of what it is all about.

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