

Environment and Global Modernity



Edited by

**Gert Spaargaren, Arthur P. J. Mol
and Frederick H. Buttel**



ENVIRONMENT AND GLOBAL MODERNITY

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Preface

This volume originated out of a conference on 'Social Theory and the Environment' organized under the auspices of the International Sociological Association (ISA) by the Research Group on 'Environment and Society'. It was a so-called 'regional conference' organized in between two ISA-world congresses which have been aimed at presenting the whole spectrum of sociological activity throughout the world. This regional conference had a more specific focus, concentrating itself on theoretical or conceptual issues within the field of environmental social sciences.

There are several reasons for having both a conference and a book which give a certain primacy or priority to theoretical issues within the field of environmental social sciences. We will shortly discuss three reasons for doing so.

First, the relative lack of a common conceptual ground can be said to be one of the key factors negatively influencing the future development of the environmental social sciences. This lack of common ground is rooted of course in the disciplinary boundaries that exist also within the environmental social sciences. Leaving the economists aside, we still are left with a great variety of disciplines which all have modest or more substantive records in the environmental field: philosophers, political and administrative scientists, sociologists, (social) psychologists and historians. Although these disciplines may in principle or in theory share a methodological foundation, in practice they sometimes seem more eager to stress the differences that come along with the specific sets of societal issues they traditionally address. The fragmentation that results from these processes of distinction and competition among the different environmental social sciences seems to weaken the position of the social sciences vis-à-vis the natural sciences. The natural sciences are known for their still dominant position in the environmental field, both with respect to the research funds and facilities they have access to as well as regarding the definition of the environmental problem they put forward. While the call for a really interdisciplinary approach seems to be nowhere stronger than within the environmental field, we think the social sciences are in some respects not yet ready for the kind of collaboration with the natural sciences that policy makers are asking for. In our view, reflecting on the theoretical and conceptual issues that the environmental social sciences have in common could strengthen their position vis-à-vis the natural sciences and highlight the specific contributions that can and cannot be expected from social scientists when it comes to doing interdisciplinary research in the future.

Second, theoretical issues are not so well developed within the environmental social sciences because a significant share of the practitioners are simply not interested in the kind of research that is regarded as 'abstract theoretical' or 'highly

formal' in character. In their endeavor to please policy makers with results that are 'relevant' in terms of being applicable in the short run as well as fitting smoothly within the existing policy frames, they keep conceptual exercises on a level that makes them easy to understand for non-scientists as well. Although there seems to exist some differences in this respect between the environmental social science tradition in the USA on the one hand and some European countries on the other, the overall conclusion – that the mainstream environmental social research can be said to be predominantly empirical in character – seems to be valid to a considerable degree. Though we consider empirical research as an indispensable ingredient of environmental social sciences, we think that one cannot and should not stick to the most recent tables, figures, and data even when the main objective is to do policy-relevant research. In view of the incredibly high pace of change that characterizes modern policies, one runs the risk of figures being outdated the very moment they are published. Moreover, the definition of policy-relevant research might, against this background of accelerating change, soon become adjusted in the direction of medium- and long-term research which can stand on its own and which is theoretically well informed.

Third and finally, theoretical research in the environmental social sciences has been frustrated or at least been handicapped by the fact that the founding fathers, the classical thinkers who delineated the field of social sciences so far, paid little attention to environmental problems at all. This is as much true for Marx, Kant and Hegel as it is for Weber, Hobbes, Durkheim, Simmel and Mead. When leading contemporaries argue that the legacy of the classics needs to be rethought and taken away from its 19th century footing, they should have the immediate consent of environmental social scientists too. When this challenge of reinventing and redefining the social science classical tradition is taken up in a serious way, environmental issues inevitably belong to the core themes to be discussed. We hope that this volume will contribute to strengthening the disciplinary identity of environmental sociology as well as to the greening of sociology.

This book would not exist if Neil Guppy, as editor of the Sage Studies in International Sociology, had not asked us to start this project. The book would not be as attractive as it is without the efforts made by Corry Rothuizen. We also would like to thank the other members of the organizing board, Riley Dunlap and Peter Dickens, and especially Guus Gijswijt from SISWO in the Netherlands because of his decisive role in organizing the Woudschoten conference from which this book resulted.

Wageningen/Madison, April 1999.

Gert Spaargaren
Arthur P.J. Mol
Frederick H. Buttel

Abbreviations

BSE	Bovine Spongiform Encephalopathy (mad cow disease)
CEE	Central and Eastern Europe
CFCs	Chloro Fluoro Carbons
ECE	Economic Commission for Europe
EMAS	Environmental Management and Audit Scheme
EU	European Union
FOEI	Friends Of the Earth International
G7	Group of Seven (richer countries of the world)
GATT	General Agreement on Tariffs and Trade
GEC	Global Environmental Change
GEF	Global Environmental Facility
GNP/GDP	Gross National/ Domestic Product
GPP	Greatest Permissible Pollution
HCRs	High Consequence Risks
HEP	Human Exemptionalist Paradigm
HIID	Harvard Institute of International Development
IMF	International Monetary Fund
IPCC	Intergovernmental Panel on Climate Change
ISO	International Standard Organization
LEIF	Lithuanian Environmental Investment Fund
MEMO	MEns en Milieu-vriendelijk Ondernemen (Man and environmental friendly enterprises)
MNE	Multi National Enterprises
NAFTA	North American Free Trade Agreement
NEP	New Ecological Paradigm
NEPP	(Dutch) National Environmental Policy Plan
NGO	Non-Governmental Organization
NICs	New Industrializing Countries
NIDL	New International Division of Labor
NIMBY	Not In My BackYard
OECD	Organization for Economic Cooperation and Development
PESTO	Public Participation and Environmental Science and Technology Policy Options
PHARE	Pologne/Hongrie: Assistance á la Restruction des Economies (EU aid programme for former CEE countries)
PPP	Pollution Prevention Pays/Polluter Pays Principle
PRA	Probabilistic Risk Assessment
RAP	Rational Actor Paradigm

SMCS	Socio-Material-Collective-Systems
SSK	Sociology of Scientific Knowledge
TPP	Temporarily Permissible Pollution
TRI	Toxic Release Inventory
UN	United Nations
UNCED	United Nation Commission on Environment and Development
USAID	United States Agency for International Development
WCED	World Commission on Environment and Development (Brundtland-commission)
WHO	World Health Organization
WTO	World Trade Organization
WWF	World Wide Fund for Nature

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Introduction: Globalization, Modernity and the Environment

*Gert Spaargaren, Arthur P.J. Mol
and Frederick H. Buttel*

Scattered landscapes: globalization and the changing nature of borders

The process of globalization did not just alter the character of modern societies themselves, it also influenced sociological theorizing on modernity. The post hoc, seemingly well-ordered nation-state system was transformed into a global system which surrounded the nation-state in a tight web of socio-economic, political and cultural relations. Although perhaps suggested by the term itself, globalization is not to be investigated only or even primarily at the highest analytical level possible. The globalization process also implies the reshaping of social relations at the local and regional levels.

The net result of globalization as an historical process is a wide range of new emerging local-global relationships. Because of these new types of interrelations, concepts like democracy, sovereignty and even the very notions of 'society' and 'state' have to be rethought and redefined (cf. Held, 1995). The nation-state is no longer the 'natural unit' or logical starting point for theorizing social systems. It is widely recognized by contemporary sociologists that major parts of 19th century sociological thinking need to be refined and reformulated in this respect. Because this task is dealt with from a variety of theoretical perspectives, one may conclude that the scattered world-landscape of our globe – consisting of a variety of socio-political and economic units and therefore sometimes referred to in terms of a new mediavialism – is more or less mirrored by the scattered landscape of sociological theorizing. For starters, sociology must be a puzzling terrain, now that the post hoc, seemingly well-ordered system of the 'orthodox consensus' and of distinguishable streams of thinking developed out of a fixed set of classical founders and of intuitive knowing about left-wing and right-wing social theorizing is gone.

One of the obvious themes that gained new relevance throughout the process of globalization is the notion of borders. Today we witness profound changes both between socio-political and geographical units as well as between disciplines and theoretical streams of thought. Hence the importance of rethinking the notion of borders both in terms of its empirical content and with regard to its theoretical meaning. The city-wall of traditional societies is very different from the fixed

borders of the nation-state system, which in turn are very different from the sometimes permeable and multi-faceted borders that come along with the inter-societal systems of the global order.

There exists, however, one additional border-transformation that has to be distinguished, one that has special relevance for environmental sociology. When the notion of society or social system is redefined, at the same time its relationship with the social and natural environment is reformulated. In what follows it will be argued that in the era of global modernity we should not only reconsider the implicit identification of the concept of 'social system' with that of the 'nation-state', but also and at the same time we have to rephrase the notion of borders between social systems and their social and natural 'environments'.

Borders between environment and society

The notion of scattered landscapes is also relevant when investigating only certain aspects of these landscapes and some more or less well circumscribed streams of thought within sociology. Environmental sociology can be regarded as a by now reasonably circumscribed sub-discipline which has society-environment dialectics as its main object of theorizing and research and which is indeed not left untouched with respect to the dynamics behind the scattered landscapes. It will be argued throughout this book that the theoretical landscape within environmental sociology has become more diverse – and according to some more confusing – in recent years and that this diversity has something to do with transformations in its object, in the society-environment relations themselves. The changing character of society-environment interdependence is related to the shifting borders between social systems and their social and natural environments, as will be shortly illustrated in what follows.

In dealing with society-environment relationships, it was most often implicitly suggested by (environmental) sociologists that society meant the 'nation-state'. Now that in the era of global modernity the notion of nation-state is no longer taken for granted, the concept of society-environment interrelationships stands in need for discussion and more precise definition too. Characteristic of societies in the context of the nation-state system was the obvious significance of borders. Like the city-wall in earlier times, these borders closed off the social system at hand from its 'outside' environment. Borders were not only relevant for protecting inhabitants of the city or citizens of the nation-state; they also made clear for everyone the meaning of 'inside' and 'outside' and distinctions such as 'endogenous' and 'exogenous' factors and developments. In explaining the development of the city or the state as a social system, internal or endogenous factors and processes tend to be privileged in sociology, as is argued by Anthony Giddens in his critique of 'unfolding models of change' or models of 'endogenous development' (Giddens, 1984: 164).

The above mentioned idea of a social system which is neatly closed off from its 'outside environment' by fixed borders also seems to have been very influential when it comes to conceptualizing society-nature relationships. The literal meaning of the concept of 'environment' already suggests a basic scheme of 'something to be surrounded by something else' – that something else being located outside the

social system itself. In most of the basic books on environmental sciences, the first figure that one comes across does visually tear apart and counterpose the social and the natural system, society and its environment. This tearing apart can be – and is – done in a variety of ways. Sometimes, the environmental system is depicted as the outside unit delivering inputs to the social system, and also handling outputs that are originated by the social system. The idea of environmental ‘functions’ or similar concepts is derived from this kind of model. In other models, the environment is depicted as the sustenance-base or the material substratum on which society is based, on which it is ‘footed’. This model always bears with it some notion of ‘limits’ to social development set by physical factors. Some other pictures are more inspired by the idea of a biosphere surrounding the globe, referring to climatic problems in particular.

Nature and environment pulled into society

Whatever their concrete shape, all these models rest on the assumption of a strict – more or less physical or symbolic – wall or border closing off the social system from its natural environment. Especially as illustrated by Ulrich Beck (1986) in his influential book on the risk-society, this counteropposing of society and nature as two separate bodies or realities is very much a characteristic of 19th century social thinking on society and its natural environment. Only after Chernobyl have we come to fully recognize that our border mentality no longer suffices. There is no ‘inside’ and ‘outside’ when it comes to dealing with environmental risks in the context of a globalized modernity. The concept of the risk-society literally captures this idea of society and (environmental) risks being inseparable. Society and nature are not only interconnected or intertwined: nature/the environment is ‘pulled into society’. When you buy the new kitchen, the environment comes along with it in terms of the risk of formaldehyde. When you eat your red meat, drink your tap-water or simply relax in the sun, environmental risks are always with you and you know it. Nature has become an integral part of societal reproduction both in its positive guise as a provider of the material assets of social life and in its negative dimensions as a risk to our health, safety and the possibilities for future development. Some of the major environmental problems are ‘democratic’ (as Beck calls them) or borderless (as we prefer). Climate change and the hole in the ozone layer are prototypes of the High Consequence Risks that cannot be isolated from society or from certain fractions or social classes within society. The fact that these problems cannot be bordered in terms of ‘contained’ within a definite time-space zone gives them their very threatening character: they don’t bother about human made borders. As Buttel and Freudenburg point out in their contribution, this does not mean that these High Consequence Risks – and let alone the majority of ‘normal’ environmental risks – affect every group, class or fraction in a similar way.

Ecological modernization in between human ecology and postmodernity

The loss of borders or bordering mechanisms separating 'societies' and their 'environments' seems to us to be one of the major challenges for environmental sociology in the present day. From the macro-ecology of climate change to the micro-ecology of domestic waste, we must come to grips with the idea that our relationship with nature or the environment cannot be taken for granted any longer but has to be reflexively organized. This can be done in different ways, and within environmental sociology we think at least three major schools of thought can be distinguished in this respect: the human ecology tradition, the ecological modernization school of thought and postmodern views of the environment. These three environmental sociological perspectives are directly related to the wider sociological debates on the character of modernity. As will become clear below, the human ecology tradition can be understood as a reaction to the long time neglect by 'mainstream' sociology of the materialist dimension of social practices and institutional developments. Ecological modernization, together with risk-society theories and some moderate versions of constructivism, are the environmental pendants of reflexive modernization perspectives, while the last tradition, including relativist constructivism, can be labeled as green versions of postmodernity perspectives. From these three streams of thought, the environmental pendants of reflexive modernization theories, and especially ecological modernization theory, are of most central concern in this volume. It is for this reason that the human ecology tradition and the postmodern perspective will not be dealt with at length in this introduction but will only be sketched in order to position the ecological modernization approach – and to a lesser extent risk-society and moderate constructivism – within the broader field of environmental social science.

Human ecology

The human ecology tradition stood at the birth of environmental sociology. The 'New Environmental Paradigm' that Riley Dunlap and others advocate was, in fact, one great effort to redefine the relationships between human societies and their natural environments. The notion of the 'Web of Life' was taken to illustrate the interconnectedness of social and natural processes and factors, and at the same time the concept served as an instrument for criticizing the borderline notions that figured in mainstream sociology at that time. NEP, the New Ecological Paradigm, was opposed against HEP, the Human Exemptionalist Paradigm that dominated the social sciences. The HEP not only defined the environment as something 'out there' but also did not seem to concern itself about its possible impacts on human societies.

The HEP-NEP debate had a high mobilizing potential for environmental social sciences and scientists, and it did contribute significantly to the establishment of a new field of study within the social sciences. Nevertheless, we think the basic theoretical notions and the main general direction that came along with this tradition, are somewhat flawed: the 'winding road towards human ecology' in the end could perhaps turn out to be a dead-end. The main reason for this is the way

in which the issue of dealing with the boundaries between the social and the natural world is settled in the human ecology tradition.

What made human ecology from the Chicago School onward into a distinguishable school of thought was the general idea that there is a realm within societies that is shaped primarily by non-social or sub-social factors: the biotic community (Nelissen, 1972). Within this biotic sub-sphere of society there are facts and phenomena that can and must be explained with reference to the realm of the biological and natural sciences. The biotic community is counterposed to 'society' or 'culture', and both realms are supposed to have their own, different logics or dynamics. The non-social sphere of the biotic community is thought to be governed by ecological laws or dynamics which must be explained with the help of concepts such as survival of the fittest, adaptation, invasion, overshoot, and so on. Should the social system be left untouched by human made policies and politics, one could witness some patterns to occur which result from these bio-natural mechanisms.

To the degree that this picture of the basics of human ecology is valid, it can be concluded that crossing the society-nature border within the human ecology tradition means taking us 'beyond the social' in a very specific way. From the Chicago School up to Peter Dickens' (1992) influential book *Society and Nature*, it is argued that some social facts or behavioral patterns should be understood or explained by making use of 'laws' or regularities that exist across different – human and non-human – species. Behavioral practices in the field of child raising, dating and mating or the practices of defending a territory or hierarchical order are thought to be governed by – and thus should be partly explained by referring to – 'basic' laws that in fact take us beyond the social realm and logics.

Ecological modernization theory: looking beyond the social without lapsing into ecologism

The value of human ecology in all its different forms – and its contribution to the emergence of environmental sociology in the 1970s – is the fact that nature and the environment are no longer simply disregarded or done without. The border, or sometimes the iron wall, between the social and the natural as it was created and sustained by most of the classical sociological thinking was criticized, and a more reflexive mode of relating the social and the natural was plead for. The social should not be treated in isolation from the natural, as modern societies are an inherently 'materialistic' affair. The environment is not the passive realm of risks and opportunities that exists somewhere 'out there', waiting to be used one day and one way for serving mankind. We cannot explain or understand the human project by referring to 'endogenous' or 'internal' social facts only. History is an inherently natural affair, and human ecology in general and the HEP-NEP debate within environmental sociology in particular have contributed to the better understanding of this naturalness of history.

The unsatisfactory element of human ecology – from the classical Chicago School on to present forms of so called 'deep ecology' – has to do with the tendency to try and restore the interrelationship between the social and the natural world in such a way that they seem to underscore the fact that all fact, events,

goals, outcomes, patterns etc. *as we know of them*, are socially mediated. There is no such thing as the 'biotic community' when this should mean sub-social or non-social. The naturalness of history is mirrored by the historicity of nature (Harmsen, 1992).

Ecological modernization theory takes up the task of redefining the borders between modern societies and their social and natural environments. The need for such a redefinition is fully recognized, and in this respect there is general agreement with the proponents of the HEP-NEP approach and other human ecologists. Ecological modernization theorists also argue that the notion of 'environment' should be taken seriously and not be left un- or under-theorized by social scientists by first constructing a city-wall as a border between social systems and their 'outside environments' and then argue that 'social facts should be explained by using social facts and factors alone'. What is conceived of as 'social' – e.g. that what happens inside the city-wall – cannot be explained without reference to the natural, without taking into account the relationships with the outer-city. This has become one of the central notions in all contributions to the reflexive modernization perspective.

Within ecological modernization theory it is agreed that we must go beyond the social by taking into account naturalness, substance flows, energy flows, materials circulating throughout human societies etc. However, in restoring the analytical priority of the environment we should not throw away the baby with the bath water. The crucial difference between ecological modernization theory and the human ecologies of different kinds is the contention that we must not replace the former disregard of nature with some form of present-day biologism or ecologism. The former disregard of nature from the side of most of the classical and post-war sociological theories is linked to the crucial design-fault in some of the major institutional clusters of modern societies (Giddens, 1990). When analyzing the industrial mode of production and consumption, the attention of most sociologists used to be focused exclusively on factors such as capital, technology and labor. Environmental factors were regarded as 'external factors' in the sense not only of being 'available for free' but also in terms of being of secondary importance when it comes to explaining the dynamics of industrial production. When ecological modernization theorists talk about 'repairing' this design fault of modern industrial production, they request that environmental factors not only be taken into account, but also that they are structurally 'anchored' in the reproduction of these institutional clusters of production and consumption. To illustrate the fact that something more serious is at hand than only 'pricing' things that used to be regarded as 'external costs' – the solution as it is pursued by most of the economists working in the neo-classical tradition – ecological modernization theorists use the more encompassing vocabulary of 'rationalizing production and consumption'. This notion refers to ecological rationalities (such as the closing of substance cycles and extensifying energy-use) that have a meaning 'of their own', implying that they are independent vis-à-vis other – for example, economic – rationalities that are involved in the reproduction of production-consumption cycles (cf. Spaargaren, this volume).

Once established as independent criteria that have relevance *sui generis*, one can start comparing and interlinking ecological rationalities with other types of rationalities. Important concepts here are the Polluter Pays Principle (the intersection of

ecological and political rationalities), the Pollution Prevention Pays Principle (intersecting ecological and economic criteria), the idea of 'Doppelnutzung' etc. It is these kinds of concepts that establish a link between ecological modernization as a general theory of societal change on the one hand and ecological modernization as a political program or policy discourse on the other. In his chapter, Rinkevicius explores these interlinking rationalities against the background of ecological modernization.

The recognition of the need to compare, link and sometimes mate with other types of rationalities involved in the industrial mode of production distinguishes the ecological modernization approach from more 'principled approaches' which lend ecological criteria an almost absolute priority above other rationalities.

Postmodern critiques of (green) grand narratives

Some will conclude from this short outline of ecological modernization theory that we are dealing here with nothing less than a new grand narrative in the making. Isn't the idea of the materiality of social systems, and the accompanying notion of ecological criteria involved in their reproduction, in principle a trans-historical and trans-cultural concept? Can one reasonably argue that the imperative of the 'sustainability' of social systems is in fact an universal one?

When understood in this way, it makes the fact of postmodern authors being among the most fierce critics of this approach understandable and predictable. It will become clear from this volume that, indeed, postmodern critiques of ecological modernization theory are as fierce as those of the more traditional critics working from a de-industrializing perspective used to be. The focus of these postmodernists is no longer on the need for 'dismantling' the institutions of modern societies instead of just 'repairing' them, as the debate on the 'technological fix' character of ecological modernization would have it. This original kind of criticism – developed for instance in the school of counter-productivity theory – does in fact underscore the need for sustainability criteria to be used in a very strict and regular way. The crucial difference of opinion between counter-productivity theorists and ecological modernization thinkers is the contention that a routinized and strict application of sustainability criteria would result in the situation in which most of the basic institutions of modernity governing contemporary production and consumption in modern industrial societies will anyhow fail (counter-productivity theory), versus the idea that these institutions could also in principle pass the test of sustainability or ecological rationality (ecological modernization theory).

Postmodernist critiques are in some respects even more radical in their consequences than those of counter-productivity theorists because they contrive the very fact that sustainability criteria could or should be developed in a feasible way whatsoever. The contribution of Blühdorn to this volume can be seen as part of this tradition. The main target of these postmodernists seems to be to show that all borders are time- and space-bound 'social constructions' which can be 'played upon' now that we have become aware of this fact in our postmodern times. So also the ways in which the borders between societies and their environments are created and sustained – from the Club of Rome in the early 1970s on to the IPCC¹-

experts of the late 1990s – can and must be criticized in order to ‘liberate’ us from the grand narratives of which the ecological crisis is only the latest plot.

When trying to evaluate the relevance of postmodern theories for environmental sociology in general and in relation to ecological modernization theory in particular, it is important to distinguish between different brands of postmodernism and between the different meanings of the term itself. However, distinguishing different brands of postmodern theory or schools of thought within the postmodern tradition hardly seems to be possible due to the complicating fact that the denial of borders is one of the constituting features of postmodern thinking. Some authors judged influential in postmodern circles are themselves fiercely refusing the postmodern label. Consequently, it seems necessary to be rather precise when dealing with certain ideas of certain authors referred to as postmodern. We will first describe in what respects the ideas of postmodern thinkers are important for ecological modernization theory and then go on to discuss the issue of green narratives as something on which both approaches seem to be in serious disagreement.

Postmodernism and the sociology of consumption

Baudrillard has been among the first in sociological theory to point to the relevance of consumption. As early as 1970 he pointed to the need to consider the ‘mirror of production’ (Baudrillard, 1998). So at a time when mainstream thinking about the industrial mode of production in social sciences was definitely productivist in its outlook, Baudrillard made us aware of the fact that the dynamics of production-consumption-cycles can no longer be properly understood when neglecting consumption. In certain respects Baudrillard can be regarded as one of the initiators of what Allen Warde, Pete Saunders, Mike Featherstone and others came to refer to later on as a ‘sociology of consumption’.

In some respects this sociology of consumption can be said to stand in the tradition of urban sociology, with its emphases on ‘collective consumption’. The sociology of consumption does, however, address certain questions that were not dealt with effectively in the urban sociology tradition. Questions concerning the ‘meaning of consumption’, the ‘motives for purchasing’ certain goods and services, and the different ‘modes of provision’ of goods and services were left un- or under-theorized. The sociology of consumption as it has been developing over the last ten years or so is also different from earlier (for example, Frankfurt School) thinking about consumer society because the former does not treat consumer-society (only) as a more or less estranging dreamworld through which people try to escape from the hard realities of the workplace. Instead, the present day study of consumption and consumer behavior is regarded as one of the vital keys to the proper understanding of the dynamics of production-consumption cycles.

Ecological modernization theory must profit from the new emphasis on consumption as it is propagated within sociology by some postmodern thinkers. Because ecological modernization was originally developed mainly in relation to the production sphere, focusing on government agencies, companies, branch-associations, social movements and other ‘institutional actors’, the role of citizen-consumers was not adequately dealt with in its initial formulations. In correcting

the productivist bias in ecological modernization, the citizen-consumer is no longer regarded as the 'end-user' or 'final stage in the chain' but instead treated as a decisive factor for explaining the dynamics of production-consumption dynamics – dynamics that are thoroughly social in character indeed, and for that reason cannot properly be understood using natural science or ecology based models describing the flows of energy and material moving up and down the chain as, for instance, is the case in most contributions to 'industrial ecology' and 'industrial metabolism'. Consuming services and products is more than just 'converting energy and materials', and postmodern thinking cannot be provocative enough to make this clear to environmental scientists.

The social dynamics of production and consumption must be studied on different analytical levels, ranging from the ways in which people make use of products and services to express their lifestyles and identities on up to the question of how post-Fordist regimes of production and consumption organization in general effect the relationship between producers and consumers. As Kumar (1995) has shown in his well written book *From Post-Industrial to Post-Modern Society*, there sometimes seems to be a very thin line between 'modernist' debates on post-industrialism and disorganized capitalism on the one hand and theories of the postmodern social order on the other. However, as Bauman (1987: 117) puts it: '(...) the frequent confusion notwithstanding, the two debates do not share their respective subject-matters'.

The contribution that environmental sociologists can make to the debate on the changing character of production and consumption in late-modern societies is the fact that sustainability issues point to the materiality of services and products, lifestyles and daily lives. This plain fact again seems to be neglected or simply forgotten by most of the postmodern contributors to the sociology of consumption.² Postmodern consumption analyses should take into account the fact that material product-qualities *do* matter, and that even the most 'virtual' consumption practices can and should be evaluated in terms of their environmental impacts from cradle to grave.

Sustainability: postmodern construct or universal value?

According to postmodern thinking, every grand narrative can and should be deconstructed and shown to be arbitrary to a great extent. Since the need for sustainable development is one of the few problems that are recognized and accepted as a challenge to society all around the world, this seems to be a privileged objective for some postmodern critics.

Within environmental sociology the debate that postmodern authors triggered is reflected in the frequently cited dispute on 'realism' versus 'constructivism'. Several authors have contributed to this debate, thereby referring to postmodern issues and ideas in an implicit or explicit way (Yearley, 1991; Dunlap and Catton, 1994; Hannigan, 1995). In this volume Fred Buttel, William Freudenburg and Ingolfur Blühdorn take different positions in this debate. Standpoints vary from 'hard' or radical to 'soft' or moderate constructivism. Especially the radical or relativist variant of constructivism seems to have as a goal in itself to deconstruct or dismantle the naive beliefs that come along with environmental stories about

global change, nuclear waste or soil erosion. From the fact that the environmental discourse has been changing from the early 1970s to the late 1990s with regard to priorities and approaches, it is concluded that environmental problems do not have a 'real', 'objective' existence but are instead the result of a process of framing of certain social problems by certain social actors in a very specific, sometimes arbitrary way. As these relativist constructivists would have it, sustainability as grand narrative, dominant discourse or 'story line' stands in need for a deconstruction, showing that the story could have been framed otherwise, leading to different kind of conclusions and priorities.

Ecological modernization theorists are not immune to the kind of epistemological issues touched upon by the relativist constructivists. In his book on ecological modernization Hajer (1995) seems to end up taking a position which is not too far away from where postmodernists would feel comfortable. In a more or less similar way Peter Wehling (1992) evaluates the position taken by Huber, Jänicke and other ecological modernists as being too little aware of the limitations of modernization theory in general and ecological modernization theory in particular. A more 'reflexive' approach is requested, especially when dealing with the role of science and technology in promoting sustainable production and consumption.

Mol (1996) has addressed the challenge to confront ecological modernization theory with the debate on late- or reflexive-modernity as it has been developed by Beck, Giddens, Lash and others. Although it is doubtful whether it has ever been the case, under the condition of reflexive modernity the ecological modernization of production and consumption can no longer be thought of or designed in terms of undisputed facts, values and futures. The ecological risks of reflexive modernity are no longer simply accepted on the authority of (natural) scientists, even more so if they at the same time also claim to have a privileged position in pointing out the best or most promising route towards a sustainable future. Science and technology are indeed disenchanted, and this has some potentially far reaching consequences for the ways in which environmental problems are perceived by lay-actors as well as policy makers.

The fact of science and technology being no longer undisputed and bereft of that special kind of authority bestowed on them in earlier times should not be confused with epistemological issues that explain the crucial differences that exist between the natural and the social sciences. When environmental problems are discussed, these two major – but, in principle, separate – issues are very often intertwined or dealt with simultaneously. This can be said to be the case when for example the 'social' (e.g., 'constructed') character of the climate change narrative – explained in terms of different interest groups, media and environmental movements all contributing to a specific mix of policies – would be presented in a way as to serve as proof for the more encompassing (postmodern) statement that the environmental crisis is something that is 'invented' by social actors and groups whose interests are served best by making a lot of noise about this or that particular social problem. What tends to be denied then is the fact that environmental problems do have a 'real' existence in that they belong to the types of problems that need to be analyzed and understood also in terms of the language of the natural and biological sciences to a certain extent. When ignoring this fact, we would end up where we started in environmental sociology, namely with the HEP-NEP distinction, with

constructivist environmental sociology as the latest variant of exemptionalist thinking.

Local-global diversity in environmental arrangements

In a certain respect, then, ecological modernization theorists do indeed claim that there is a new grand narrative in the making. This narrative in its most fundamental form boils down to the need for all social systems to reflexively take into account and (re)organize their relationship with the environment in an era that the classical borders are dissolving to a considerable extent. From the global to the local level, specific kinds of social arrangements should be developed governing our intercourse with nature. One does not necessarily have to advance an a-historical or universal notion of 'limits' to recognize the fact that social life should be permanently monitored and reorganized with regard to its consequences for the 'environmental utilization space' that is available for our and coming generations. The need for such new socio-environmental arrangements to be developed is as 'universal' as the modern industrial system of production and consumption itself. With this system obtaining a global character these days, one can and must conclude that the need to take on board issues of sustainability is a 'universal' one indeed. That this 'universalistic' claim does not imply that the socio-environmental arrangements must take a similar shape on every spot of the earth is something that goes without saying. One just has to look at the increasing diversity of local and regional arrangements that, for example, are developed by households, neighborhoods, villages and mega-cities with respect to their handling of energy, water and waste to grasp the fact that the 'universal need' for sustainability does not imply a 'uniform' solution to result from this. Globalization means that the diversity of local-global arrangements is, in fact, increasing, also with respect to the socio-environmental arrangements that are developed all over the world. It is the task for environmental sociologists to contribute to the understanding and the future development of these types of arrangements.

About this volume

The sociological and theoretical aspects of globalization, ecological modernization and the social construction of environmental risks are among the central themes addressed by the authors contributing to this volume.

In the opening contribution Fred Buttel strongly places environmental sociology within the sociological tradition. He explores the historical roots of theories in environmental sociology by analyzing what classical sociological theory (in short, sociological contributions in line with the works of Marx, Weber, Durkheim, Simmel and others) has to offer. In doing so, he makes us aware that these 'classics' in sociology were not ignorant of the biological-material dimensions of social life and still have a major influence in contemporary environmental sociology. At the same time he also explains both the logical steps of sociological theory towards what often has been called 'exemptionalism', and the developments in American environmental sociology towards neglecting environmental improvements and

overestimating the role of environmental movements in environmental reform. This forms the background of the introduction of three relatively new environmental-sociological perspectives into American environmental sociology: social constructivism, ecological modernization and risk society. While all having their drawbacks, Buttel makes a strong point in emphasizing the value of these reflexive modernization perspectives as a creative response to the traditional North American environmental-sociological literature.

These perspectives are dealt with at length in this volume, especially against the background of a globalizing world order. Ecological modernization theory as one of the environmental contributions to reflexive modernization forms the central object in the contribution of Gert Spaargaren. Against the historical background of environmental sociology, he explains the emergence of ecological modernization theory, especially in Western Europe. Spaargaren shows how from the mid-1980s onwards the central characteristics of the idea of ecological modernization have been developed and reformed against the background of, on the one hand, empirical developments in environmental policies and environmental movements in Europe, and developments and debates in (environmental) sociology on the other hand. By elaborating the idea of an ecological rationality and an ecological sphere, he seeks to strengthen the sociological foundation of ecological modernization theory. From a different perspective, Eugene Rosa introduces risk-society theory by relating it to other sociological theories and perspectives on environmental risks that have been developed, especially in constant discussion with the rational actor paradigm. Against the same background of reflexive modernization he classifies various contributions in understanding environmental risks and the way modern society deals with them, in the end concluding that it is neither possible nor desirable to integrate them in a single grand theory on risks. The third and final perspective that Buttel relates to reflexive modernization, social constructivism, is put at central stage by William Freudenburg. In describing the often fierce debates between realists and social constructivists of different kinds, he not so much chooses sides but surpasses this controversy in a specific way. He blames constructivists for their preoccupation with the social construction of environmental problems, while neglecting the social construction of what he labels social privileges: the social construction of the claims that environmental disruptions are not problematic. He provides various lines along which the social constructivists' project might be redirected.

While the three contributions above touch upon issues of globalization, the next two papers of Arthur Mol and Michael Redclift take the globalizing world order as their central focus of attention. Both authors concentrate on the interrelation of processes of globalization on the one hand, and environmental deterioration, environmental struggles and environmental reform on the other. Noting that globalization theories have tended to take account of the environment and that environmental sociology has not taken into account the processes of globalization, Arthur Mol provides insight into how globalization processes might both endanger environmental quality and construct mechanisms for triggering environmental reform. This latter process, he argues, is often misunderstood or omitted, and he fills that gap in using ecological modernization theory as a useful perspective. While Arthur Mol provides a more overarching analytical framework anchored in globalization theories, Michael Redclift focuses on the consequences of a global-

izing world economy – and culture – for environmental quality, but even more for reshaping social theory. In line with the observations of Fred Buttel and others in this volume, Redclift argues convincingly that most of the classical and contemporary contributions in (environmental) sociology offer us little insight into global environmental deterioration and the failures of global environmental management. In the end, he concludes that globalization in its present forms is still destructive for both the South and the environment.

Against the background of globalization Leonardas Rinkevicius shows us in his contribution how the environmental perspectives within the framework of reflexive modernization prove valuable for analyzing developments in what he calls ‘double risk societies’: those Central and East European countries in transition that are confronted with not only environmental risks but economic risks as well. Using, and partly transforming, the perspective of ecological modernization, he analyses the developments in belief systems of industrialists and authorities when confronted with the need for a radical environmental transformation of Lithuanian society. He notices growing convergence in their ideas on the best strategies for environmental reforms, closely related to some core ideas of ecological modernization.

The contributions of Pieter Leroy and Jan van Tatenhove, and Ingolfur Blühdorn both assess the value of ecological modernization theory for understanding environmental change and reform in Western industrial societies. While Leroy and Van Tatenhove focus primarily on the political domain and elaborate on the theory of political modernization, they share with Blühdorn most points of discussion regarding the first generation contributions to this theoretical framework: its focus on especially the production dimension, its strong normative connotations, its Eurocentrist character, its poor attention to social struggles and its danger of evolutionism. While Leroy and Van Tatenhove acknowledge that some of these points have been addressed more recently (and even in this volume) and they themselves contribute to ‘repairing’ these omissions especially with regard to the political dimension, Blühdorn considers these drawbacks as too fundamental to see any future for ecological modernization theory. In writing from a postmodernist and strong social constructivist perspective, Blühdorn opts for what he calls a post-ecologist politics: the radical devaluation of the ecological critique of modern society, on the grounds that there are no longer any (ecological) grounds for an environmental redesign of the institutional order. To some extent he indeed ‘falls back’ to the ‘exemptionalist’ position, as we have indicated above.

In the last contribution Ernest Garcia compares economic, biological (system-theory) and sociological models of sustainable development. He takes up the issue of defining sustainable development from a sociological and philosophical perspective, thereby reflecting on the thoroughly social character of sustainability.

Conclusion

In the present volume we have aimed to contribute to environmental sociology by both advocating for and duly recognizing some of the shortcomings of ecological modernization theory. The co-editors are by no means of one mind regarding the attractiveness of ecological modernization theory, but they are all agreed that the

rise of ecological modernization theory in the 1990s will have been one of the most creative episodes in the history of environmental sociology. Ecological modernization theory has served to highlight the importance of theorizing the processes of environmental improvement, and it suggests important new ways of understanding the political, legal, and socio-cultural roles of ecological movements. Perhaps most significantly, ecological modernization opens up new ways for environmental sociology to become linked to debates over and empirical research on modernity and postmodernity as well as counter-modernity. The ability of ecological modernization to bring new perspectives on consumption into environmental sociology is an exciting development.

As we have noted several times in the preceding, the most problematic aspect of ecological modernization is its rooting in the institutions and experiences of the Northern European countries. However, several of the contributions to this volume, particularly that of Mol, have suggested some ways in which ecological modernization can be enhanced as social theory. One such strategy is to conceptualize ecological modernization as a global process, albeit a highly uneven one, and to undertake research on the ways in which the structures and practices of globalization facilitate or undermine ecological modernization processes. A related strategy is to use the Dutch and German cases as the starting points for a comparative sociology of ecological modernization.

A good share of environmental sociology today suffers from the same weaknesses – the lack of a comparative approach, and a lack of attention to the contradictory processes of globalization – that ecological modernization has had. Ecological modernization theory, however, might well have some advantages in rectifying these shortcomings over other forms of environmental-sociological theory. Even if not, ecological modernization theory will have been useful if it can help catalyze the need to give priority to comparative research and to environmental phenomena in the globalization perspective.

Notes

1. In 1988, the United Nations Environment Programme (UNEP) and the World Meteorological Organization (WMO) set up the Intergovernmental Panel on Climate Change (IPCC). This is an intergovernmental scientific and technical body with a small secretariat and a worldwide network of scientists.
2. One example of the neglect of environmental issues in postmodern views of consumer society is the TCS-special issue edited by Featherstone (1991), which does not consider the challenges posed by the need for a 'dematerialization' of postmodern consumption patterns at all. When consumption is discussed by Baudrillard with respect to the 'environmental nuisance' that comes with it, he only points to the fact that waste-behavior can be analyzed as a kind of 'celebration of affluence' without investigating in any detail the kind of perspective that could result from this (Baudrillard, 1998, p. 5).

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