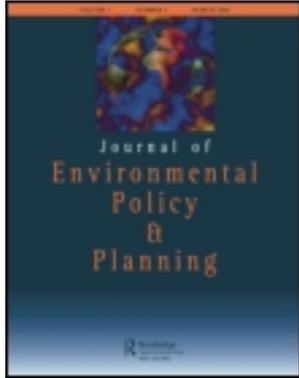


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Publisher: Routledge

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Journal of Environmental Policy & Planning

Publication details, including instructions for authors and subscription information:
<http://www.tandfonline.com/loi/cjoe20>

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Available online: 18 Jun 2010

To cite this article: Ørnulf Seippel (2000): Ecological modernization as a theoretical device: strengths and weaknesses, *Journal of Environmental Policy & Planning*, 2:4, 287-302

To link to this article: <http://dx.doi.org/10.1080/714038562>

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Ecological Modernization as a Theoretical Device: Strengths and Weaknesses

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ABSTRACT Ecological modernization has become a central concept in environmental social science. The purpose of this paper is to take a closer look at this concept as a theoretical device. Two criteria structure the analysis. First, some central writings in the sociology of science are applied to identify what a theory should be taken to mean, and what functions it could be supposed to fill. Second, modernization is obviously an important aspect of ecological modernization, and I will show how the discourse on ecological modernization coheres to this more general sociological discourse. The conclusion concedes that it seems reasonable to point out a shift in environmental discourse, as the theory on ecological modernization does, but that, if the concept is to play a fruitful role in future environmental social science, one should (i) try to develop a more focused typology, (ii) interpret the typology as more explicitly reflecting a historical phenomenon (as having both causes and consequences), and (iii) develop it in a middle-range direction. As a theory of modernization, ecological modernization remains underdeveloped with regard to classical themes as functional differentiation, rationalization and individualization. Copyright © 2000 John Wiley & Sons, Ltd.

Key words: ecological modernization; social theory; discourse; typology

Introduction

Not many years ago, one could safely introduce papers in environmental sociology complaining about the scant attention paid to environmental problems by social theorists. Today, environmental sociology abounds with concepts attempting to provide general accounts of the relationship between modern society and environmental problems: ecological rationality, ecological communication, reflexive modernization and ecological modernization, to mention a few. Thus, while the situation not long ago was characterized by a lack of theoretical approaches, the current situation, perhaps, represents an overload of theory. Consequently, it is time to reflect more systematically on some of these theoretical concepts' achievements and future prospects. Hence, the purpose of this paper is to take a closer look at one of these concepts: ecological modernization. While other contributors to the ecological modernization discourse employ environmental concerns

(Blowers, 1997), normative guidelines (Christoff, 1996) or socio-empirical data (Neale, 1997; Reitan, 1999) as a benchmark for critique, the purpose of this paper is more theoretical. The intention here is, first, to summarize what the concept has been taken to mean by various contributors and, second, to identify some of its merits and failures as a theoretical concept, and thereby also, to indicate some challenges for those working with the concept in the future. Thus, the aim is both to provide an overview of how the concept has been applied so far, and to evaluate its utility as a theoretical concept. Achieving the latter goal requires explicit evaluative criteria, and I will rely on two such criteria: reflections upon (i) what a theory basically is and does, and (ii) the more general discourse on modernization.

The paper consists of seven sections (including this introduction). The next section will examine what ecological modernization has been taken to mean by some of today's most central authors in the field. In the section entitled 'What is social theory?', I will present some criteria from the sociology of science to identify, at a general level, what a theory is and

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what functions it might fill. Thereafter, I will investigate how ecological modernization operates and functions as a theory according to these criteria. The section entitled 'Theories of modernization' introduces some core elements from the general discourse on modernization, and is followed by a discussion of ecological modernization in light of this general discourse. The final section sums up the preceding analyses, and outlines some challenges for those working with ecological modernization at a theoretical level.

Ecological modernization: a review

The concept of ecological modernization is both applied in empirical analyses and developed as a theoretical concept. Obviously, both uses involve theoretical concerns, hence, both empirical and theoretical approaches will be taken into consideration. The following review of the employment of the ecological modernization concept will have a certain qualitative flavour; the idea being to let the distinctiveness of various contributions speak for themselves. Evaluative criteria and more stringent analyses will follow in sections three to six, entitled 'What is social theory', 'Ecological modernization as theory', 'Theories of modernization', and 'Ecological modernization as modernization', respectively.

Albert Weale: the new politics of pollution

Weale (1992) applies the concept of ecological modernization both to illustrate general changes in environmental policies during the 1980s, and, more specifically, to explain differences between British and German approaches to the topic of acid rain. As a premise for these analyses, he emphasizes that ideological factors, besides rational-choice perspectives and institutional approaches, should play an autonomous role. Thus, for Weale (1992, p. 75), ecological modernization is an ideology, without any canonical statement, and this ideology, fundamentally, acquires its meaning when contrasted with the policy strategies of the 1970s that supposed

'... that the character of environmental problems was well understood; that environmental problems could be handled discretely; that end-of-pipe technologies were typically adequate...'. The common reaction to this approach was that this most likely meant to avoid the basic problems rather than to solve them—the costs do not disappear, they are merely pushed forward and possibly magnified in the process' (p. 76)—and the most decisive break between this traditional approach of the 1970s and ecological modernization lies in a new understanding of the relationship between the economy and the environment. Ecological modernization challenged the widespread belief that there was a zero-sum trade-off between economic profit and environmental concerns, and argued instead that a sound environment is a precondition for economic activity and, *vice versa*, that the environment could mean profitable business: '... the ecological modernisation sees it [environmental protection] as a potential source for growth' (Weale, 1992, p. 76). Thus, while economic and ecological concerns were previously seen as contrary, they are, in time, taken to be mutually reinforcing factors.

Weale also attempts to show that ecological modernization in itself (as a specific ideology) and the context within which it has to operate differ greatly. This is illustrated through a comparison between the British and German approaches to the issue of acid rain. In both cases, there was a conflict between a 'clean-air coalition' and an 'economic feasibility coalition'. In the German case, however, a kind of synthesis developed between these two approaches, whereas no such synthesis occurred in the British case. In sum, ecological modernization is an ideology—which, according to Weale, is neither coherent, well-formulated nor uncontroversial—held by some (most?) of those taking part in the policy process and that substantially covers the understanding of the economy in light of changing environmental affairs.

Maarten Hajer: the politics of environmental discourse

As an introduction to Hajer's (1995) work, it is useful to pay attention to his very explicit

anti-realist position that results in a social constructivist approach addressing the question of how we conceive of environmental problems. More specifically, it is Hajer's intention to see '... how certain dominant perceptions of a problem are constructed and how political decision-making takes place in this context of, and through, essentially fragmented and contradictory discourses within and outside the environmental domain'. (p. 15). In short, Hajer attempts to see how social constructions of the environment related to policy questions have changed, and to analyse '... ecological modernization as the new dominant approach to conceptualizing environmental problems...' (p. 4).

To achieve this aim, Hajer provides both a methodological vocabulary for the discursive approach and applies this method in a comparative study of the acid rain issue in the Netherlands and Britain. In the context of this paper, however, I will restrict myself to examining what remain the more general characteristics of Hajer's diagnosis of ecological modernization. Where Weale stresses that ecological modernization becomes what it is in contrast to a dominant perspective of the 1970s, Hajer agrees—describing this preceding period as focusing on legislative measures through a non-holistic approach and disregarding environmental problems as genuine problems—but sees the discourse of ecological modernization as representing a blend of divergent approaches manifest in three texts: *Limits to Growth* (Meadows et al., 1972), *Blueprint for Survival* (Goldsmith et al., 1972) and *Small is Beautiful* (Schumacher, 1976). Together, this gives ecological modernization the form of '... a policy strategy that is based on a fundamental belief in progress and the problem-solving capacity of modern techniques and skills of social engineering' (Hajer, 1995, p. 33). Furthermore, '[i]n the most general terms ecological modernization can be defined as the discourse that recognizes the structural character of the environmental problematique but none the less assumes that existing political, economic, and social institutions can internalize the care for environment' (p. 25).

More specifically, ecological modernization approaches the environmental problems as calculable, as a positive-sum game and, in princi-

ple, as reconcilable to economic growth (Hajer, 1995, p. 26). When these ideological changes are interpreted in a wider context, four factors stand out as having caused the emergence of ecological modernization: (1) radicalization caught up by economic recession, (2) changes within the environmental movement, (3) new environmental issues and (4) the factual availability of an alternative discourse. Moreover, this shift in understanding of the environmental problems has, according to Hajer (1995, pp. 28–29), considerable consequences for other social institutions: the judicial and administrative structure of policy-making is changing, science is ascribed a new role, both micro- and macro-level economics are affected, the legislative discourse changes character, and 'ecological modernization acknowledges new actors, in particular environmental organizations and to a lesser extent local residents'.

Despite a somewhat different context and empirical setting, the core of Hajer's approach is much the same as Weale's: an ideological shift concerning the relationship between the environment and the economy, which takes place, first and foremost, within political circles. But, in Hajer's work, there is also a tendency to involve other institutions, and it is not that clear where the core of ecological modernization is to be found. The two differ in the way they interpret this ideological shift, Hajer having a much wider and looser agenda than Weale, and, generally, giving the impression of a more general shift with more decisive implications.

John Dryzek: the politics of the earth

In Dryzek's (1997) world of ecological discourses, ecological modernization is understood as one of two sustainability discourses (the other being sustainable development), which in turn is also an expression of one of four predominate ecological discourses of modern society. Basically, Dryzek identifies ecological modernization as a political–economic discursive formation. With regard to content, Dryzek (1997, p. 141) suggests that 'Ecological modernization refers to a restructuring of the capitalist political economy along more environmentally sound lines... though not in a way that

requires an altogether different kind of political economic system' (cf. Hajer, 1995, p. 25). Moreover, '... the key to ecological modernization is that there is money in it for business' (Dryzek, 1997, p. 142). Dryzek specifies the benefits of ecological modernization for business in four points: pollution prevention pays, it becomes more expensive to solve the problem in the future, a better environment is achieved, and there is money to be made in selling green goods and in prevention products.

This ecological-economic view implies a '... political commitment, to the enlightened long term rather than the narrow-minded short term' (Dryzek, 1997, p. 143), and commitments that include 'foresight, attacking problems at their origins, holism, greater valuation of scarce nature, and the precautionary principle' (p. 143). Moreover, Dryzek identifies four discourse elements: a system approach (holistic), an anthropocentric relationship towards nature, key partners (governments, business, reform-oriented environmentalists and scientists), and key metaphors (ecological emphasizing the unity of economy and ecology in *oikos* and modernization as belief in progress).

When it comes to interpreting environmental policies, Dryzek is more reluctant than, for example, Weale to assign any important role to ecological modernization, or ideology in general. The basic condition for Dryzek is capitalism, and what makes some countries able to bolster their capitalist economies is first and foremost a corporate ordering of political influence, rather than ideological frames.

Arthur Mol and Gert Spaargaren: political programme and social theory

Mol and Spaargaren have contributed to the discourse on ecological modernization both together and independently (Spaargaren & Mol, 1992; Mol & Spaargaren, 1993; Mol, 1995, 1996; Spaargaren, 1997), and they distinguish between ecological modernization as theory and as a political programme. As a socio-political programme it is a description of the historical process that has taken place, as a theory of

social change it is an attempt to develop existing social science models (Spaargaren, 1997, p. 21).

As a historical process, they understand ecological modernization as part of a three-stage model where the first two periods correspond more or less with the periods found in Weale and Hajer. While Weale emphasizes the importance of the established version of environmentalism of the 1970s, and Hajer that of three different (both radical and established) environmental discourses, Mol & Spaargaren (1993) point out what they call detraditionalization or a counter-ideology as the forerunner to ecological modernization, which is, in turn, succeeded by reflexive modernization.¹ Next, they describe the essential difference between the first two periods in more general terms than Weale and Hajer, and say '... that the second major upsurge of environmental concern brought an end to the conception of the environment as an external factor with regard to the institutional organisation of production and consumption. Thus, environmental interests became institutionalised within the economic sphere ...' (Mol & Spaargaren, 1993, p. 437). At the same time, however, ecological modernization is also characterized as '... the dominant perspective in the present-day environmental discourse ...' (Mol & Spaargaren, 1993, p. 433). According to Mol & Spaargaren, ecological modernization is a constructive approach that assigns pivotal roles to science and technology, and explicitly states that this is a change within modernity. More specifically, they locate 'its origin in the economic sphere' (Spaargaren, 1997, p. 23). As a political programme, it means an end to 'ad-hoc, pragmatic, end-of-pipe solutions' and '... a re-defining of the role of the state vis-à-vis civil society, with both market actors and environmental movements redefining their former roles' (Spaargaren, 1997, p. 25).

In a recent attempt to defend ecological modernization against its critics, Mol (1998) suggests five criteria to identify ecological modernization: (i) the transformation of the role of the nation-state in environmental reform; (ii) the increasing involvement of market actors and dynamics in environmental reform; (iii) the changing role of science and technology; (iv) modification in the position, role and ideology

of environmental NGOs, and (v) the emergence of a new environmental discourse.²

Furthermore, Mol & Spaargaren (1993) add a new and more original twist to their interpretation of ecological modernization, when they assert that environmental interests have gained independence from (i) political and ideological interests and (ii) economic interests. Taken together, we are (iii) about to have '... an autonomous ecological sphere, possessing its own specific domain and rationality *vis-à-vis* the political, cultural and economic spheres' (Mol & Spaargaren, 1993, p. 437). This idea is most thoroughly elaborated by Mol (1995, 1996).

What is social theory?

The aim of the following sections is to evaluate the fruitfulness of the concept of ecological modernization in two respects: as a general theory and as part of the discourse on modernization. The two analyses follow identical patterns; first evaluative criteria are presented (sections 'What is social theory' and 'Theories of modernization') and then evaluative analyses follow (sections 'Ecological modernization as theory' and 'Ecological modernization as modernization'). The final part of the paper discusses and concludes the analyses.

Theory in general

With respect to what a theory is, there is probably, to a certain extent, a common sense agreement: theory involves some kind of abstraction, saying something general about (empirical) particulars. Typically, this includes a description and a general statement about the relationship between two or more entities. On this general level, what distinguishes a good theory from a poor theory is its internal logic and consistency: how the elements of the theory make up a coherent unity. This is, again rather generally, achieved by establishing a fruitful typology that is somehow put into a larger context, interpreted or explained as caused by something preceding it, and subsequently, leading to or causing something to

succeed it. In a more strict sense, a theory implies an explanation of an empirical finding: particular general assumptions generate concrete hypotheses that are confronted with empirical data (Jasso, 1988).

Theory and sociological substances

To distinguish further between various kinds of sociological theories, one might follow Alexander (1987, p. 15), who emphasizes that: 'Presuppositions about action and order are the 'tracks' along which sociology runs'. This implies that various sociological theories are characterized by differences in their understanding of social action and social order. First, there are differences with regard to the degree of rationality assigned to social actors. Second, there is disagreement with regard to the question of social order: which social order mechanisms, at which levels, are important, and how do they contribute to coordination of social action? These beliefs about individual freedom and social order constitute the moral and intellectual 'rationale' for the subject of sociology, and one's stance on these questions reflects, according to Alexander, presuppositions of a metaphysical character. Thus, with the outset in such metaphysical presuppositions, sociological theorists are mostly rather 'narrowly' concerned with specific ontological segments of the social world: either social systems or individual rational choices.

Theory and empirical challenges

Merton's (1968) classification of theories has a more practical aim, and is particularly concerned with the relationship between theorizing and empirical research. In this respect, Merton distinguishes between different kinds of sociological theory, spanning from general conceptual theory to free-floating empirical data. On the one hand, sociology often operates at a general level, involving discussions of 'concepts' that might lead to fruitful typologies that, in turn, could contribute to a better understanding of the kinds of phenomena in focus. Occasionally, concepts will also indicate relevant

empirical research strategies. The main problem with such general approaches is that not enough attention is paid to how relationships between entities are actually to be understood, and how more concrete hypotheses are to be generated. Merton's (1968, p. 143) succinct conclusion says that 'General orientations do not suffice'. On the other hand, sociologists occasionally find empirically validated covariations, which they take to be complete theories. Yet, the problem is that even though empirical relations are tracked down, one is not able to state what these relations imply, they are not lifted to an abstract level. Merton's 'middle-range' ideal then raises the challenge of providing an appropriate theory for specific purposes, and, in particular, his concern is theory that mediates between concrete empirical observations and more general theory.

Alexander and Merton provide classifications that direct attention to important challenges for those working with social theories; they point to important features of what a theory might look like, what it covers, what it might achieve and how it functions. In the following section, these typologies will be applied to detect strengths and weaknesses with regard to ecological modernization as a theoretical concept.

Ecological modernization as theory

Ecological modernization as general theory

At a general level, the challenge is simply to sort out the descriptive elements of the various concepts of ecological modernization—what kind of classifications and typologies they are based on—and, subsequently, to see how ecological modernization is understood as part of a larger setting: what it succeeds and what it precedes. Thus, the first and obvious question is: what is described as ecological modernization? The answers are not all compatible, but they do point in the direction of a core, which is probably most explicitly spelled out by Weale. Ecological moderniza-

tion is a shift in the ideology held by most or many of those involved in the policy processes of modern societies, and which has economic matters in light of environmental affairs as its reference. Moreover, there is also general agreement that ecological modernization is based upon—or at least, not contrary to—the implicit belief in science, technology and progress so characteristic of modernity. Although most analyses seem to share these characteristics, there is a tendency to slide from this rather concrete and specific perspective to describe the changes assigned to ecological modernization in a more general and less exclusive way. At another level, there is also an inclination to interpret this term as both analytical and normative: as what should take place if the environment is to be saved.

With respect to the understanding of this discursive shift as part of more general historical changes, there also seems to be agreement up to a certain point: a discursive formation appeared in the 1980s, as a reaction to something in the 1970s, and, for some, with repercussions for a third stage emanating in the late 1980s. Various constellations of ideological discourses are seen as the most important precursor to ecological modernization, but exactly what these formations entail varies. Weale emphasizes a strong 'establishment attitude' prioritizing economic interests as the ideological background and catalyst for ecological modernization. Mol and Spaargaren seem most concerned with a radical and anti-modern posture as triggering ecological modernization, while Hajer operates with three different environmentalisms leading to ecological modernization. In addition to these cultural precursors to ecological modernization, other factors are also considered. Weale interprets ecological modernization (an ideology) as one of three factors explaining policies with regard to pollution (the others being institutions and individual instrumentalism). Hajer introduces economic recession, new environmental problems and a new environmental discourse as factors leading to ecological modernization. There are also differences with regard to what these discursive shifts imply for other institutions. While Weale, in his

rather specific project, interprets the influence of ecological modernization as part of the policy on environmental pollution in two western countries, Hajer points to implications for almost all important social institutions of modern society.

In short, the baseline of the environmental modernization discourse seems to imply that a shift is taking place in policy discourses. Yet, if the concept is to function analytically, there is a need for clearer answers as to exactly which discourses to focus upon (where, when), and what these discourses substantially refer to. There are also diverging opinions as to how these discursive formations fit into the larger historical lines of modernity. Finally, there is a tendency to confuse this shift in discursive content with changes in the topic of the discourse; a change in the (political) understanding of the economy is taken to mean a factual shift in the economy. In sum, this could be taken to mean that ecological modernization, in a strict but conventional sense, does not currently qualify as a theory. It is a case-based (inductive) description of a developmental trend, but the attempts to infer from these particular cases to general theories are not very convincing. Nonetheless, the impression given is that this is a process taking place in most western countries.

Ecological modernization and theoretical substance

Alexander distinguishes between theories according to their ontological reference; whether they are occupied with the question of social order, or individual–instrumental action. Ecological modernization is understood as a shift in discourses, ideologies or belief systems that function as frames of reference; that is, they give direction to thought and action. Hence, ecological modernization is a perspective mostly concerned with social order; that which makes action possible.

This raises at least five important theoretical challenges. The first is (again) to specify which social order arenas should actually be in focus. Where and when is the discourse labelled 'ecological modernization' to be found? Is it to be found within one subsystem of the political

system (the administrative apparatus), in the whole political system, or in all social systems? Second, this 'new' discourse must be seen in relation to other cultural discourses. Third, this set of cultural discourses must be analysed within a wider setting that includes structural factors. Fourth, this broad set of enabling and constraining structural and symbolic patterns should be interpreted in relation to a whole range of social 'agents': institutions, organizations, groups and individuals, at global, regional, national and local levels. The point here is not to assert that the more factors present in an analysis the better—to a certain extent, the opposite is preferable: 'explaining as much as possible with as little as possible' (King *et al.*, 1994, p. 29)—but to explicate possible ways to analyse a specific discourse.

Furthermore, a more theoretical query is also involved. If ecological modernization is said to be a policy discourse providing stable frames of reference, the question is what kind of social order it thereby contributes to: not only its symbolic or semantic content but what role(s) it plays with regard to coordination of social action. It is not self-evident that the prevalence of one specific discourse also has significant implications for all behaviour concerned, because structural interests, ideological factors and more idiosyncratic proclivities have important roles to play. From this perspective, a more detailed and specific account of how this specific discourse influences various kinds of values, attitudes and concrete social interaction is required.

Ecological modernization, theory and empirical challenges

Merton's typology of sociological theories spans from abstract unempirical conceptualizing to empirical findings without theoretical bearings. Ecological modernization is applied somewhat differently by the authors reviewed here, yet the most general impression is that the discourse on ecological modernization is what Merton calls 'conceptual': a clarification and specification of general concepts. According to Merton, this often implies a certain vagueness with regard to definitions of the relationship between factors covered by the concepts. In some of the

writings reviewed above, ecological modernization is slightly more concrete and specific, and Mol (1995) even claims to operate with hypotheses, although of a 'sensitizing' kind, which implies that there are still problems with respect to stating specific empirical assumptions and hypothesis. These ways to theorize imply problems that require (i) a better understanding of the relationships between the factors that enter into the discourse, and (ii) that they should be more convincingly connected to empirical data. In sum, the theoretical state of ecological modernization demands middle-range theories (Merton, 1968). Finally, and almost paradoxically, the ecological modernization perspective is also vulnerable to the opposite criticism because it occasionally takes the form of empirical statements without clear theoretical implications: a shift in ideological orientation is observed, but the general and theoretical implications and causes of this shift remain unclear.

The various problems emerging from this short discussion of ecological modernization in light of a few simple typologies indicate that there are many challenges facing those working at a theoretical level with the concept of ecological modernization. My aim has primarily been to present some perspectives that make it possible to identify some potential problems facing those operating within this discourse. Which of the challenges brought to light here can be accepted as important by those involved remains an open question. Nonetheless, the need to clarify the basic typology (what is ecological modernization?), a proper level and mode of interpretation (temporally: causes and implications), and its application with regard to empirical work are all important aspects that should be taken seriously if the discourse on ecological modernization is to contribute in a constructive way to the understanding of the society–environment nexus.

Theories of modernization

Modernization is chosen as the key term characterizing the 'socio-ecological change' taking

place in the 1980s. The aim of this section is to take a closer look at the concept of modernization as it is conventionally used, and then to evaluate the discourse on ecological modernization in light of the 'normal' application of this core concept. There are two ways, both applied in this paper, to characterize the process of modernization: historically and analytically.

Modernization in a historical perspective

Most fundamentally, modernization is a process taking place somewhere in the world at a certain point in time. As an example, Giddens suggests that '... "modernity" refers to modes of social life or organisation which emerged in Europe from about the seventeenth century onwards and which subsequently became more or less world-wide in their influence' (Giddens, 1990, p. 1). More concrete historical accounts would include the history of political, economic and cultural modernization, and related topics, such as urbanization, secularization, the rise in education, shifts in sexual roles, new technologies and patterns of communication. Some general aspects of this process will be described more analytically below.

The modern era has often been identified with a characteristic of its cultural layer, namely the belief that '... to be modern is to believe that the masterful transformation of the world is possible, indeed that it is likely' (Alexander, 1990, p. 16). Although this belief in progress by many has been understood as the crux of the process of modernization, the fact is that this process could also be described through its ambiguity (Offe, 1996), because it embodies countercultural tendencies almost from the start; that is, voices less optimistic and more sceptical to the instrumentalism, technologism and alienation inherent to modernity. Furthermore, it is also clear that 'nature' and the 'environment' have played important parts at times with respect to the status of the 'project of modernity' (Touraine, 1981; Eder, 1990; Szerszynski, 1996).

Analytical perspectives: differentiation, rationalization and individualization

The basic distinction that serves as 'the difference that makes a difference' for modernization is between what is left behind—a traditional society—and what emerges as something new. The essential idea is that traditional societies of the past could be seen as whole, well-integrated units, with a specific determinant dynamic between general cultural patterns and the everyday life of individuals. Against such a background, the process of modernization involves a form of dissolution, disembedding and reinstitutionalization articulated along three dimensions: the emergence of different *functional arenas of social interaction*, an availability of various *forms of rationality*, and, as a consequence for the subjects experiencing this process, *individualization*.

Functional differentiation

The process of functional differentiation reflects societal specialization ('the division of labour') and the fact that different social institutions 'take responsibility' for various tasks, and thereby contribute to the reproduction of society: material production, societal reproduction, education, distribution of power etc. How and why different functions become specialized and institutionalized is explained in different ways (Luhmann, 1997; Mark, 1998). In this context, it suffices to point out that there actually are various norms, frames, codes and rules that guide and sanction social interactions within different social arenas.

Rationalization

Whereas traditional world-views (religion, myths) supplied authoritative interpretations of the world, modernity is characterized by a supportive posture towards questioning such hereditary world-views. The result is that different forms of rationality dominate within distinct social arenas, various situations and historical epochs. Rationality might be classified according to validity criteria corresponding to onto-

logical premises—such as found in the Kantian distinction between the objective, normative and subjective—or according to specific instrumental aims as in ecological modernization: economic rationality vs. ecological rationality.

Individualization

Taken together, the process of functional differentiation and rationalization represents a loss of authority for traditional world-views—'. . . the past loses the power to determine the present' (Beck, 1992, p. 34)—and a host of possibilities force themselves upon the individual to an extent unimaginable in traditional society. As a result, each and everyone is doomed to make up a life of their own without definite guidelines from outside authorities—'*Die Menschen sind zur Individualisierung verdammt*' (People are doomed to be individualized; Beck, 1993, p. 152).

Holism and subsystems

According to Therborn (1995) and Tilly (1997), one of the merits of conceptualizing society and history as modernity/modernizing is the fruitfulness of holistic approaches, and consequently, the productivity of analysing the (lack of) relationships between social institutions: either as autonomous and isolated social systems communicating ecologically according to their own restricted codes and programmes (Luhmann, 1986), or environmental politics emerging in the intersection of political, economic and cultural forces (Münch, 1996). Furthermore, it is also possible to take the study of modernization in a different and less macro-oriented direction. Modernization does not only mean functional differentiation on the macro level: the different social systems are themselves further differentiated. To give an example: the political system that has the overall function of sharing power through collectively binding decisions is differentiated into subsystems comprising the intermediation of interests and values (organizations, political parties and the public sphere), the political institutions themselves and the administrative apparatus. An understanding of how the environment is framed within these many

subsystems would probably be important, both for the factual existence of different ecological discourses, how they interact with each other, and how they influence the process of modernization at a macro level.

An analysis of environmental problems within modern society often (implicitly) builds upon these perspectives. Either a functionally differentiated system (for example the economy) is blamed for operating according to its own code, and thereby neglecting environmental problems (the critical point being that there is no overarching system that could impose environmentally sound constraints on the many 'autonomous' systems), or one form of rationality (often instrumental rationality) is accused of being too narrow to allow more environment-friendly norms or feelings to influence social interaction. Thus, the challenge is to retain the picture of modern society as manifold and complex: numerous social systems, different forms of rationality and an increasing responsibility for individuals taking 'sound' decisions (*cf.* 'ecological judgement'; Phelan, 1993).

Ecological modernization as modernization

Historical perspective

Historically, it seems strange to point to a break labelled 'modernization' at a time when most others seem most occupied with the end of modernity or, at least, a significant break within it. What justifies this choice of the term 'ecological modernization', however, is probably that it is not until now that the environment really becomes an issue for social systems other than those specialized in protest (social movements) and, hence, not until the 1980s that it appears as an integral part of the process of modernization. A further justification for using the term is the optimistic belief expressed in the vision of ecology and economy as reciprocally supportive concerns and the importance assigned to truly modern factors, such as technology and science: a strengthening of the optimistic dimension of the ambivalent modernity.

At the same time, however, it is important to remember that applying the term 'modernization' also implies an empirical assertion: that the environment has not contributed to a break with modernity; something remains as it has been. This might be so, but the ecological modernization discourse remains persistently unclear as to what is characteristic of modernity and what qualifies as a break. On the one hand, ecological modernists are eager to point out that Beck's thesis on the risk society is unreliable and too speculative (Mol & Spaargaren, 1993), and Hajer (1995) explicitly contends that ecological modernization does not involve structural changes. On the other hand, most of the contributors to the field are eager to point out decisive changes within modernity: 'The institutions of modern society, such as the market, the state and science and technology, will be radically transformed in coping with the environmental crisis, although not beyond recognition' (Mol, 1996, p. 309). Indeed, while Hajer (1995, p. 25) initially claims that '... existing ... institutions can internalize the care for the environment', he later opens up the possibility that 'Concrete case studies should show to what extent the emergence of the discourse of ecological modernization leads to a shift from remedial to anticipatory policy-making strategies, and to what extent the recognition of certain problems leads to structural change (p. 34).' However, given the absence of criteria specifying what qualifies as 'change', the dismissal of the risk society and others diagnosing decisive breaks within modern society remains preliminary, and not too convincing.

A sceptic's response might be to argue that what is implied by the term ecological modernization is close to being trivial; what else could and should an important new issue end up as, if not an issue within the hegemonic discourse of the society and period from which the issue emerges? Typically, modern social institutions bring the environmental issue to the fore (albeit in a critical manner), and typically modern institutions are going to deal with it. Contrafactual, as long as post-modernity and environmentalism are taken to be forces inherent to modernity (Lyotard, 1984; Szerszynski, 1996), there are few alternatives to ecological modernization!

The alternative to this 'triviality' could be that these theories were addressing a consequential change within modernity, but then the term would be misleading. A concept such as reflexive modernization is probably more appropriate to address such phenomena—shifts in emphasis within modernity—than ecological modernization.

Functional differentiation

Although the contributions to the discourse on modernity differ widely (e.g. Luhmann, 1986 vs. Münch, 1996), the idea of functional differentiation leaves the impression of social systems as rather rigidly bound up in their constitutional logics (codes, media of interaction). Hence, social systems are characterized by a certain inertia, which makes significant social change more cumbersome and complicated than indicated in the literature on ecological modernization, where marginal discursive shifts are assumed to have significant systemic or structural consequences (Peters, 1994). The main reason for this failure is that the discourse on ecological modernization provides inadequate analyses of the characteristics of the social systems that they address compared with the analyses provided in parts of the general discourse on modernization: the institutions and social systems invoked by the ecological modernists must have some characteristics that make them systems or institutions, and which particular characteristic one assigns to a system/institution has important implications for how it is possible to think of potential societal changes, whether within modernity or as break with modernity.

Most commentators on the process of modernization emphasize, to varying degrees, that functional differentiation implies that no social system should be analysed as forming the centre or hierarchic top of modern society; that is, even though the political system fulfils a specific and important function, it is only one social system among many, and not *the* system, as is sometimes implied when a change in one specific policy discourse is portrayed as representing a total and basic societal transformation. This implies that changes identified within one

sphere of society should not automatically be taken to mean changes within other spheres of society, or as changes in society at large. Ignoring the constraints inherent to the constitutional logic of a social system and the disordered multitude of such systems makes the analyses of ecological modernization appear a bit simplistic and incomplete—as addressing a traditional coherent society instead of a modern differentiated society.

Rationalization

When it comes to rationalization, on the one hand, ecological modernization does not seem to involve 'other' forms of rationality than those allegedly predominant in the process of modernization: the belief in progress, science and technology is to be taken further. What is lacking is an account of which roles other forms of rationality—normative, aesthetical—might play in a modern society. On the other hand, ecological modernization seems to imply important transformations when it comes to 'ecological rationality', as opposed to 'economic rationality'. First, ecological rationality emancipates itself; second, it integrates with its antipode (economic rationality), although without threatening the economy as an institution (Mol, 1996). This is a thought-provoking and interesting idea, which actually runs contrary to the common understanding of the process of modernization—as differentiation (disembedding)—and, taken seriously, raises a lot of questions. A first question is, obviously, what does ecological rationality actually mean or imply? Second, what does it emancipate from? Third, where was or is it to be found if it is, as Mol (1996) says, not political, economical or cultural? Fourth, how are the different forms of rationality to integrate without breaking with the process of modernization? The case is not that such reintegration is an inconceivable scenario, whether a different functional and rational process actually reintegrates (re-embeds) is an empirical question. But, if it happens, it should probably be described as a break with the process of modernization, the emergence of something new or the return of a premodern

social formation. Yet, then the term ecological modernization seems rather misleading. Again, not taking the multi-dimensionality of the process of modernization—here, with respect to rationalization—seriously into account results in incomplete analyses.

Individualization

Individualization is outlined as a central aspect of the process of modernization, in particular by Beck (1992). This topic, however, is strikingly absent in the ecological modernization discourse. There are two possible reasons for this neglect. First, this dimension of the modernization process is not considered important; the authority of the new environmental discourse is considered so imperative that individuals are assumed to comply automatically. Second, it is simply neglected. The result, in both cases, probably discloses an overestimation of the potential influence of a discourse, which, though probably important, is surely not determinant of social action. Furthermore, the fact that this aspect of the modernization process is absent is indicative of a somewhat static understanding of social processes and an underestimation of the dynamics of modern environmental discourses, and opens the possibility of misjudging their actual influence. The critique of sociology as applying an oversocialized image of social action (Wrong, 1961) seems relevant in this context.

Holism and subsystems

One good reason for approaching social processes through the concept of modernization is the fact that it allows for holistic analyses; that is, analysing different social institutions in relation to each other. Such a relational perspective is found in Hajer's (1995) work addressing the relationship between science and politics, and in Cohen (1998), who analyses cultural values as preconditions for ecological modernization. Yet, a more systematic analysis, which goes to the core of this topic, is not to be found, and a more adequate understanding of such intersystemic relationships would have provided a

clearer understanding of what actually characterizes ecological modernization. Without explicit intersystemic analyses, the understanding of how one specific policy discourse might influence the complex process of modernization remains superficial and incomplete. The same critique also applies to the level of subsystems. There are good reasons to expect ecological modernization to proceed with different pace and speed between social systems (e.g. politics and economy) and, furthermore, within systems, i.e. between different political subsystems (e.g. within a ministry of environmental affairs and ministries of transport, energy or finance, within different occupations within the administration), within different political parties, within different sectors of the economy (new middle class), and within different cultural segments of the population (education, cultural capital). Again, the lack of a clear and explicit understanding of the complexity of modern society makes the discourse on ecological modernization appear too hasty in pointing out only one discursive formation that is, without further ado, interpreted as hegemonic for society.

Conclusions

The aim of this paper has been to take a closer look at one of the many concepts available for general analyses of the relationship between society and nature: first, to study what, descriptively, the concept of ecological modernization refers to and, second, to discuss what kind of theorizing this represents. In this concluding summary, I will present the main findings from the preceding analyses, and thereby also indicate some of the challenges facing those working within this discourse.

The immediate strengths of the ecological modernization approach are many. First, it draws attention to empirical shifts in social approaches to environmental issues (i.e. the environmental discourse) that probably take place and are, if this is the case, important. Second, it seems timely to focus explicitly upon the cultural or ideological aspect of this change. Third, labelling this shift 'ecological modernization' has successfully brought attention to this field of

research. Finally, theorizing in this speculative way stimulates interest for an important issue. As the focus of this paper has attempted to point out, however, these advantages also bare some costs.

On a first and general level, the question is what kind of descriptive typology ecological modernization presents, how this typology is interpreted (historically and analytically) as part of a larger context, and whether it is successfully used to abstract from the empirical cases it is based upon. To address the final question first: the contributions to the ecological modernization discourse do not seem to generate true theory beyond descriptions of certain cases. The empirical results from the cases studied are implicitly taken to have a general validity, but the research strategies applied are actually not able to support such claims. Attempts to construct a theory in the stricter sense of the term—assumptions, hypotheses, and social mechanisms are not important in the ecological modernization discourse.

With regard to the typology that makes up the essence of the diagnosis of ecological modernization, it is possible to extract a common core from the various contributors to the discourse. Ecological modernization points out (i) a policy discourse (both in a very abstract and in a more specific political sense), which (ii) has the economic system as its reference and (iii) identifies a shift within this policy discourse referring to the relationship between economy and ecology. Whereas the functioning of the economic system and ecological considerations were formerly taken to be mutually exclusive, they are now seen as mutually reinforcing. The main problem is that this concrete and focused meaning of the term often becomes obscured either by attempts to generate the impression of a much more general process (inferring that all discourses, and even all social systems, are about to internalize environmental concerns) or by attempts to turn it into a normative or practical programme (this is what ought to happen if the environment is to be saved).

There also seems to be a basic consensus over the historical interpretation of the ecological modernization typology: the shift that is addressed takes place in the 1980s. Furthermore,

there is a degree of agreement concerning the fact that the most important precursors to this shift are various ecological discourses of the 1970s. There is, however, disagreement regarding which of these preceding discourses should be considered most important. There is also a dispute as to what succeeds the process of ecological modernization. In a less systematic and less coherent way, different authors also include non-discursive explanatory factors. Together, this gives the impression of a certain historical focus, but the elements generating and resulting from this process vary to such an extent that the ecological modernists could reasonably be accused of lacking a common understanding of how the shift termed ecological modernization comes about.

Alexander classifies theories according to their socio-ontological substance. This raises interesting challenges that should be addressed by future analyses of ecological modernization. First, it generates an explicit understanding of the fact that the ecological modernization perspective is focused on the question of social order. Second, this makes it relevant to specify (i) which and what kind of discourses the ecological modernists address, (ii) where and when such discourses are to be found, (iii) other discourses of relevance for the ecological modernization discourse and (iv) structural components of relevance for the ecological modernization discourse. Third, to conduct a reliable theoretical analysis, one should be aware of how these discourses and structures (wherein ecological modernization is one element among many) function, and are of relevance for institutions, organizations, groups and individuals as actors.

Next, Merton's typology makes it clear that ecological modernization as a discourse mostly operates at a rather abstract level that implies two important challenges: (i) to establish the relationships between the entities constituting the theories more clearly and (ii) to relate these theories to empirical data in a way that makes it possible to state interesting hypotheses, to provide useful operationalizations and fruitful interpretations of empirical data.

Thus, at present, it seems as if theories on ecological modernization through a common

reference to a societal shift most successfully function according to what Blumer (1969) once called a sensitizing concept, lacking '... such specification of attributes or benchmarks and consequently it does not enable the user to move directly to the instance and its relevant content ... Instead, they rest on a general sense of what is relevant' (p. 148). As a conclusion then, and according to more specific requirements of what a theory is, it does not seem justified to speak of ecological modernization as one theory.

Finally, the discourse on ecological modernization has been evaluated in light of its parent term: modernization. Historically, the process of modernization is nothing new, and invoking it today in this context is unexpected when most others are occupied with the breaks within or ends to modernity. Nonetheless, it also seems reasonable to take this point in time as the occasion when environmental issues are really taken seriously by modern institutions, and to emphasize that the incorporation of the environment is actually marked by some of the core characteristics of what has been known as modernization (optimism, belief in science, technology etc.).

At an analytical level, more problems appear when ecological modernization is read in light of general theories of modernization. Modernization implies functional differentiation, rationalization and individualization. Functional differentiation means that different social systems function according to specific codes or frames; this is what enables them to fulfil social functions. The ecological modernists are not clear as to what characterizes their various social systems and, thus, are unable to recognize the conditions and possibilities for operating within them or, alternatively, to recognize when a particular system is (not) changed, exhausted or transcended. The many forms of rationality that are considered valid within a modern society are not reflected in the ecological modernization discourse, and one is thus left with a rather narrow picture where the forms of rationality one 'dislikes' are simply absent from the analyses.³ The process of individualization is poorly reflected in the theory of ecological modernization, and this contributes to the im-

pression of a rather static and deterministic understanding of how the discourse depicted by ecological modernization influences different spheres of late modern society. In light of the complexity found in the many interesting writings on modernity/modernization, the description of ecological modernization, as it appears in the ecological modernization discourse, actually misses many of the interesting theoretical points found in the general discourse on modernity/modernization.

Discussing the concept of ecological modernization in light of more general theories of modernization gives many suggestions as to how an improved discourse on ecological modernization might be envisaged. First, with regard to historical aspects, there is both a question of the justification of the relevance of the concept itself. However, more than 15 years after the ecological modernization shift was identified, the question of identifying more recent shifts and studying how they fit into the conceptual framework of ecological modernization should be timely. It would also be time to look for the implications of ecological modernization, both in sociological and ecological perspectives. Second, and analytically, general theories of modernization first and foremost hint at the possibility for more refined and nuanced analyses of the environment as a dimension of societal processes of change.

Notes

1. Hajer has a somewhat similar approach in the conclusion of his book, where he indicates that 'reflexive ecological modernization' is what the globalization of the 1990s might bring.
2. These points seem to be a reformulation of the six sensitizing hypotheses to be found in Mol (1995, p. 58).
3. This is very much the same critique that Lash (1993) directs towards Beck's thesis on the risk society.

References

Alexander JC. 1987. What is theory? In *Twenty Lectures: Sociological Theory since World War II*, Alex-

J. Environ. Policy Plann. 2: 287–302 (2000)

- ander J (ed.). Columbia University Press: New York.
- Alexander JC. 1990. Between progress and apocalypse: social theory and the dream of reason in the twentieth century. In *Rethinking Progress: Movements, Forces, and Ideas at the End of the 20th Century*, Alexander J, Sztompka P (eds). Unwin Hyman: Boston, MA.
- Beck U. 1992. *Risk Society: Towards a New Modernity*. Sage Publications: London.
- Beck U. 1993. *Die Erfindung des Politischen*. Suhrkamp Verlag: Frankfurt am Main.
- Blowers A. 1997. Environmental policy: ecological modernisation or the risk society? *Urban Studies* 34: 845–971.
- Blumer H. 1969. *Symbolic Interactionism: Perspective and Method*. University of California Press: Berkeley, CA.
- Christoff P. 1996. Ecological modernisation, ecological modernities. *Environmental Politics* 5: 476–500.
- Cohen M. 1998. Science and the environment: assessing cultural capacity for ecological modernization. *Public Understanding of Science* 7: 1–19.
- Dryzek JS. 1997. *The Politics of the Earth: Environmental Discourses*. Oxford University Press: Oxford.
- Eder K. 1990. The cultural code of modernity and the problem of nature: a critique of the naturalistic notion of progress. In *Rethinking Progress: Movements, Forces, and Ideas at the End of the 20th Century*, Alexander J, Sztompka P (eds). Unwin Hyman: Boston, MA; 67–87.
- Giddens A. 1990. *The Consequences of Modernity*. Polity Press: Cambridge.
- Goldsmith E, Allen R, Allaby M, Davoll J, Lawrence S. 1972. A blueprint for survival. *The Ecologist* 2(1): 31–38.
- Hajer MA. 1995. *The Politics of Environmental Discourse: Ecological Modernization and the Policy Process*. Oxford University Press: Oxford.
- Jasso G. 1988. Principles of theoretical analysis. *Sociological Theory* 6: 1–20.
- King G, Keohane RO, Verba S. 1994. *Designing Social Inquiry: Scientific Inference in Qualitative Research*. Princeton University Press: Princeton, NJ.
- Lash S. 1993. Reflexive modernization: theory. *Culture & Society* 10: 1–23.
- Luhmann N. 1986. *Ökologische Kommunikation*. Westdeutscher Verlag: Opladen.
- Luhmann N. 1997. *Die Gesellschaft der Gesellschaft*. Suhrkamp Verlag: Frankfurt am Main.
- Lyotard J-F. 1984. *The Postmodern Condition*. Manchester University Press: Manchester.
- Mark N. 1998. Beyond individual differences: social differentiation from first principle. *American Sociological Review* 63: 309–330.
- Meadows DH, Meadows DL, Randers J. 1972. *The Limits to Growth: A Report for the Club of Rome's Project on the Predicament of Mankind*. Universe Books: New York.
- Merton RK. 1968. *Social Theory and Social Structure*. The Free Press: New York.
- Mol APJ. 1995. *The Refinement of Production: Ecological Modernization Theory and the Chemical Industry*. Van Arkel: Utrecht.
- Mol APJ. 1996. Ecological modernisation and institutional reflexivity: environmental reform in the late modern age. *Environmental Politics* 5: 302–323.
- Mol APJ, Spaargaren G. 1993. Environment, modernity and the risk-society: the apocalyptic horizon of environmental reform. *International Sociology* 8: 431–459.
- Mol APJ, Spaargaren G. 1998. Ecological modernization theory: a reply to its critics. Paper presented to the 14th World Congress of Sociology, Montreal, 26 July–1 August.
- Münch R. 1996. *Risikopolitik*. Suhrkamp Verlag: Frankfurt am Main.
- Neale A. 1997. Organising environmental self-regulation: liberal governmentality and the pursuit of ecological modernisation in Europe. *Environmental Politics* 6: 1–24.
- Offe C. 1996. *Modernity and the State*. Polity Press: Cambridge.
- Peters B. 1994. Why is it so hard to change the world? *International Sociology* 9: 275–295.
- Phelan S. 1993. Intimate distance: the dislocation of nature in modernity. In *In the Nature of Things*, Bennett J, Chaloupka W (eds). University of Minnesota Press: Minneapolis, MN; 44–62.
- Reitan M. 1999. Ecological modernisation and 'Realpolitik': ideal, interests and institutions. *Environmental Politics* 7: 1–26.
- Schumacher EF. 1976. *Small is Beautiful: A Study of Economics as if People Mattered*. Abacus: London.
- Spaargaren G, Mol APJ. 1992. Sociology, environment and modernity. *Society and Natural Resources* 5: 323–344.
- Spaargaren G. 1997. The ecological modernization of production and consumption: essays in environmental sociology. PhD thesis, Wageningen Agricultural University.
- Szszynski B. 1996. On knowing what to do: environmentalism and the modern problematic. In *Risk, Environment and Modernity. Towards a New Ecology*, Lash S, Szszynski B, Wynne B (eds). Sage Publications: London; 104–137.
- Therborn G. 1995. *European Modernity and Beyond*. Sage Publications: London.

- Tilly C. 1997. *Roads from Past to Future*. Rowman & Littlefield Publishers: Lanham, MD.
- Touraine A. 1981. *The Voice and the Eye*. Cambridge University Press: Cambridge.
- Weale A. 1992. *The New Politics of Pollution*. Manchester University Press: Manchester.
- Wrong D. 1961. The oversocialized conception of man in modern sociology. *American Sociological Review* 26: 183–193.