Dynamic Constellations of the Individual, Society, and Nature: Critical Theory and Environmental Sociology

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ENVIRONMENTAL SOCIOLOGY
"AVANT LA LETTRE"?

What distinguishes Critical Theory from the mainstream of Marxism, Western Marxism, as well as from disciplinary academic sociology in the Durkheim-Weber tradition, is the emphasis on nature as a crucial element of the historical dynamics of societies. Thus, as early as the 1950s, Critical Theory suggested a comprehensive conceptual framework of social theory that appears to be of great potential interest and relevance for any sociological attempt at combating the environmental problems of present societies.

The relationship between the individual and society is inseparable from their relationship to nature. The constellation of all three takes a dynamic form. It is not enough to be content with insight into their potential interplay; it is up to social theory to take a scientific approach, with a view to investigating the laws according to which this interplay develops and discovering the changing forms adopted by the individual, society and nature in their historical dynamics. (Institut für Sozialforschung 1956: 43, my translation)

The theoretical approach outlined here implies much more than that society is merely influenced by its geophysical environment or climatic factors. It also

claims—as the authors emphasize with reference to Marx—"that each natural environment with which man finds himself confronted has already been socially preformed" (Institut für Sozialforschung 1956: 44). At first sight, the basic idea of this approach is not too far removed from later definitions of environmental sociology. Well known is the definition given by Carton and Dunlap (1978), according to which environmental sociology is "the study of interaction between the environment and society." But we should be careful not to neglect the differences: while Carton and Dunlap refer to the interactions between society and environment, Adorno, Horkheimer, and colleagues speak of society and nature, adding the human individual as a third factor involved in the interrelations under study. Furthermore, they emphasize that the interrelations between individuals, society, and nature are themselves permanently changing and taking different historical forms.

On the one hand, there is evidence of many points of contact between the "strong program" of critical materialist social theory outlined by the Institute of Social Research and the idea of environmental sociology. On the other hand, in a special issue of a leading German sociological journal on state-of-the-art of environmental sociology (Diekmann and Jaeger 1990), Critical Theory of the Frankfurt School is not mentioned among those theoretical perspectives that are regarded to be important and fruitful for environmental sociology.

This state of affairs appears paradoxical and requires more detailed examination. It has to be determined not only how Critical Theory could be fruitfully applied to environmental issues, but also why it has scarcely been applied to date. One reason for the present situation is, of course, quite obvious, if not trivial. The basic concepts and ideas of an interdisciplinary social theory, as inaugurated by Horkheimer in the 1930s and connected with the names of Adorno, Marcuse, Löwenthal, and Benjamin, were largely formulated at a time when there was no public or scientific awareness of "environmental problems." Consequently, there has been no empirical research into environmental issues within this tradition. Therefore, one cannot seriously expect the familiar topics of environmental sociology, such as environmental consciousness, energy consumption, green social movements, and so on, to be dealt with within Critical Theory.

In addition and, theoretically speaking, of greater importance, the "second generation" of critical theorists, in particular Habermas, have performed a "linguistic turn" since the 1970s by grounding social theory on the concept of communicative action, hence moving away from the interrelations between society and nature. Thus, at the same time that industrial societies were becoming aware of the risks they were posing for their natural environments as well as for their own material reproduction, Critical Theory started to focus on the normative foundations of modernity and on crises of social integration.

This orientation, influenced by Habermas, can also be found in a new research agenda of the Institute of Social Research in Frankfurt, presented in 1997 (Institut für Sozialforschung 1997). While the environmental problems of modern societies are of course mentioned, the overriding focus of the institute's research program is seen in the "dramatic increase in crises of social integration" (Dübel and von
SOCIETY AND NATURE IN CRITICAL THEORY

Of course, it is impossible to give here even a brief overview of the development of Critical Theory from Horkheimer to Habermas and beyond, from its beginnings in the 1920s up to the present. In particular, we have to take into account that Critical Theory is anything but homogenous. On the contrary, in the works of different authors at different periods of time there can be found a great variety of concepts of nature and of the interrelations between society and nature (see Vogel 1996). It would therefore be most unsatisfactory to highlight one period, one author, or one concept of nature as exclusively representative for Critical Theory. Instead, I will briefly give a retrospective theoretical outline of those arguments and stages of development in Critical Theory that have most strongly influenced its concern with relations between society, individuals, and nature.

Horkheimer and Adorno: The Critique of Instrumental Reason

In its initial phase, Critical Theory was shaped mainly by the programmatic work of Horkheimer done in the early 1930s. In this period, there emerged a peculiar state of tension between the innovative project of critical, interdisciplinary, empirically oriented social research on the one hand and a more or less orthodox, Marxist-inspired philosophy of history on the other. Horkheimer sees philosophy as the unifying bond preventing the empiricists, positivists, and the individual disciplines. Whereas the philosophy of history is based on the belief that the progress of societal work and development of productive forces embody an objective rationality, the empirical social sciences (with a leading role played by social psychology) should substantiate why this rationality has failed to develop into a new rational order of society.

Nature or societal relations to nature had no real role to play in this conception of Critical Theory shaped via Lukacs by Hegel: it was not the rationality of society’s appropriation of nature that was in question—which is why the natural sciences were considered to be irrelevant for the interdisciplinary project of a critical theory of society—but the irrationality of a social condition blocking the rational potential inherent in the productive forces. Yet it should not be neglected that even in this period Horkheimer, influenced by Schopenhauer, laid great emphasis on the singularity and transience of the human individual’s existence, thus contrasting with the Hegelian philosophy of history.

It is generally known that since the late 1930s Horkheimer’s ultimately idealist philosophy of history has undergone almost complete reversal in the face of Nazism, Stalinism, and World War II. Paradigmatic for this phase, of course, is the Dialektik der Aufklärung (Dialectic of Enlightenment) drafted jointly by Horkheimer and Adorno, along with Horkheimer’s Eclipse of Reason, both published in 1947. The idea and rational appropriation of nature now no longer seem like objective potentials of societal emancipation but as instruments of merely subjective, blind self-preservation. The basic idea behind Dialektik der Aufklärung is that enlightenment and reason have so far served only human self-preservation at the expense of nature. To date, enlightenment itself has remained nothing but instrumental rationality, a rational domination and suppression of nature, with nature then striking back at society and individuals: “Every attempt to break out of natural constraints by breaking nature enters all the more deeply into those constraints. Hence the course of European civilisation” (Horkheimer and Adorno 1971: 15, translation adopted from Vogel 1996: 55).

Domination of nature thus returns to society, both as social domination and as the human individual’s alienation from internal and external nature. “[W]orld-domination over nature turns against the thinking subject himself; nothing is left of
him but that eternally same I think that must accompany all my ideas” (Adorno and Horkheimer 1997: 26). Horkheimer and Adorno thus create a close and causal link between mastery over nature, a state of social control and domination, and a self-repressive structure of individual identity (see also Wiggershaus 1996).

Allusions to a way out of the self-destructive dialectic of Enlightenment are made by Horkheimer and Adorno only in general and seemingly mysterious terms, with formulations such as “remembrance of nature in the subject” (“Eingedenken der Natur im Subjekt”) or “self-cognition of the spirit as nature in disunion with itself” (“Selbsterkennung des Geistes als mit itself entzweieter Natur”). They argue that it is not until humans recognize that they themselves are also nature, and that by mastering external nature they are also mastering themselves, that enlightenment can become reflexive and free itself from its entanglement in power and domination. Yet, it should be stressed that this need not imply a simplistic and harmonic view of “reconciliation with nature” as frequently ascribed to Critical Theory. For the concept of nature itself remains paradoxical in Dialectic of Enlightenment: on the one hand, nature is what should be released from domination, and on the other hand, nature is the driving force behind “blind” human self-preservation. As Adorno has argued later in his Negative Dialectic: “The suppression of nature for human ends is a mere natural relationship” (1973: 179). At the same time, this ambivalence clearly shows that “mere” nature, in its immediate form, cannot be a force for an ideal for positive reference. Thus, as Schmid-Noe (1990: 77) has put it, society cannot derive normative principles from domination of nature nor from nature itself. Horkheimer and Adorno’s argument therefore does not expose a “tendency towards naturalism,” as Vogel (1996: 10) suggests. Rather, it aims at a conscious and reflexive transformation of “mere natural” relationships with nature, at “a new and unprecedented form of transcendence” of nature (Soper 1999: 65).

There can be little doubt that the perspective of Dialectic of Enlightenment makes room for a more profound and stimulating view of the relationship between societies and their natural environment, as well as of the naturalist and idealist assumptions in traditional Marxist philosophy of history. The relationship of societies with nature appears to be structured mainly by domination, exploitation, and destruction; what is more, reason itself turns out to be almost inseparably linked to domination and repression. Hence, the critique of instrumental reason, focusing on the dialectics of reason and nature, is often, and not without good reason, seen as Critical Theory’s most important contribution to an understanding of environmental problems. However, it is obvious that Horkheimer and Adorno do not primarily argue from an environmentalist perspective, at least not in its current meaning. The major threat to society posed by instrumental reason lies in the regressive naturalization of society as well as in the repression of the “internal” nature of the individual, rather than in the exploitation and destruction of the “external” environment. Accordingly, Horkheimer and Adorno draw on a concept of nature that is not based on natural sciences like physics or biology, but on philosophy and, particularly with regard to internal nature, on Freud’s psychoanalytic theory.

Moreover, we should be aware that in Dialectic of Enlightenment, the critical argument shifts from a historical and sociological context to an anthropological or meta-historical one. It seems to be human self-preservation itself, rather than the economic rationality or the social and political structures of capitalist industrialist societies that is directing Enlightenment and civilization toward self-destruction. An important and problematic consequence is that Horkheimer and Adorno do not clearly differentiate between Weber’s concept of formal purpose rationality and the concept of instrumental reason as a specific historical form turning formal rationality into social and technological domination whereby the means control and eventually replace the human ends. Hence, Horkheimer and Adorno are not able to draw a clear line between humans working on nature in general and a specific form of mastery over nature leading to nature’s destruction. The critique of instrumental reason therefore tends to favor normative or aesthetic treatment of nature instead of a rational, end-oriented approach—and it is often interpreted in this way.

The hermetic, aporetical, and, at least partly, self-contradictory argument of Dialectic of Enlightenment has often been criticized, particularly by Habermas. Whereas many of his objections are certainly valid, his own proposal of a “switch in paradigms” leading to communicative rationality poses considerable problems, particularly regarding the understanding of the relationships between society and nature. Before dealing with this in more detail, I first devote some attention to considerations made by Benjamin and Marcus, because these offer different possibilities for deepening the philosophical and anthropological argumentation of the Dialectic of Enlightenment for a sociological analysis of historical constellations of society, individuals, and nature.

Benjamin: Mastering the Relations between Society and Nature

Benjamin, who had never been a core member of the Institute of Social Research, developed a different concept of historical materialism from the 1920s onwards that was much less influenced by Hegel, Lukács, and Weber than was Horkheimer’s theory. For Benjamin, historical materialism was neither a historical philosophy of progress, nor a theory of universal societal rationalization and modernization. Modernity, therefore, is not the final stage in a process of universal rationalization, but the historical project started by the capitalist industrial societies during the nineteenth century, with all the myths, dreams, and illusions in which these societies were bound up. Domination of nature by technology, progress, and evolution were (and are) some of the most striking of these illusions. In his unfinished Arcades Project (Passagen-Werk), intended to offer an “Original History of the 19th Century” (“Urgeschichte des 19. Jahrhunderts”), Benjamin wanted to decipher the underlying myths, dreams, and phantasmagorias in fashion, advertising, architecture, technology, means of transportation, and so on of nineteenth-century societies (see in greater detail Buck-Morss 1991; Wehling 1992).

This point of view allowed Benjamin to conceive of the exploitation of nature as a social and cultural project of industrial capitalism, rather than a universal feature
of human civilization. In his well-known "Theories on the Philosophy of History" from 1940, he demonstrates how strongly the labor movement is integrated into this project and how it has developed for itself a "vulgar Marxist" conception of work as well as of nature: The exploitation of nature "with naive complacency" is contrasted with the exploitation of the working class, as Benjamin critically remarks (1969: 256). This sentence can be said to anticipate the development of Western societies after World War II, where successful social integration of the working classes was based on environmentally harmful economic growth and the rise of a consumer society. At the moment of its decline, we can see more clearly that this link between growth, employment, and welfare is not an irreversible stage in social evolution, but a fragile historical constellation of society, individuals, and nature.

On a more theoretical level, an argument from Benjamin's essay "One Way Street" (1978a), published in 1928, turns out to be very fruitful and stimulating. Here, Benjamin argues:

The mastery of nature, so the imperialists teach, is the purpose of all technology. But who would trust a cane wielder who proclaimed the mastery of children by adults to be the purpose of education? Is not education above all the indispensable ordering of the relationship between generations and therefore mastery, if we are to use this term, of that relationship and not of children? And likewise, technology is not the mastery of nature but of the relationship between nature and man. (1978b: 93)

The issue is no longer about mastery over nature but the way in which societies structure their relationship to nature. On the one hand, this is a normative criticism of the one-dimensional idea of society's mastery over nature, favoring instead the reflexive concept that societies need to "master" their relationship to nature. Not increasing domination of nature, but "balancing out" the relations between nature and society, therefore, should be seen as the aim of societal development. On the other hand, Benjamin's argument is of analytic interest also. It poses the historical and sociological question of how and in what forms, material as well as symbolic, societies structure and express their relations to nature; and it stresses that there are strong interrelations between the way in which societies organize their relationship to nature on the one hand, and social processes, technological visions, and cultural identities on the other hand.

Marcuse: Technology As a Social Project

Another, yet in some aspects quite similar, attempt to overcome the hermeneutics of Dialectic of Enlightenment (and a forerunner of ecological argument) should be seen in Marcuse's critique of technological rationality during the 1960s. Here, the ambiguous relationship between formal purposive rationality and instrumental reason formed a main focus of Marcuse's argument. While his 1964 book One-Dimensional Man (London: Paladin) is well known, I prefer to illustrate his argument by concentrating on his essay "Industrialisierung und Kapitalismus im Werk Max Webers" ("Capitalism and Industrialization in the Work of Max Weber") (1965), which is based on a paper presented to the Congress of the German Sociological Association in Heidelberg in 1964.

Marcuse's intention was to demonstrate that Weber's concept of assumedly formal and universal purposive rationality turns out to be a historical and cultural project and a form of domination of both nature and society. Yet, unlike Horkheimer and Adorno, Marcuse does not trace back this project to the structure of human self-preservation as such. He argues:

The concept of technological rationality is perhaps an ideology in itself. It is not simply the use of it but technology itself that implies mastery (over nature and man), methodological, scientific, calculated and calculating mastery. Rather than being imposed on technology "afterwards" and from the outside, certain aims and concerns of mastery are already present in the construction of the technical apparatus; in each case, technology is a historical-societal project; in it is projected what a society, and the interests governing it, intend to do with mankind and things. Such an "aim" of mastery is "material" and as such is part of the actual form of technological rationality. (1965: 127, my translation)

Two important consequences follow from this position: first, the orthodox Marxist notion of the neutrality of technology or even of technology as a vehicle of emancipation, which was still guiding Critical Theory in the 1930s, is radically called into question; and second, the idea of a formal universal rationality, going back to Weber and transported by modernization theories, is rejected. Marcuse points out that models of rationality are always based on a certain historical and cultural relationship to nature and individuals. Rationality thus appears as a cultural, societal project and technology as a social construction, although Marcuse, of course, did not analyze in detail the process of social construction of technological artifacts as current social studies of science and technology do. For this reason, he could only envisage the vague and ambiguous idea of a "new science" and "new technology," instead of analyzing how science and technology are shaped by economic interests and cultural visions and are, themselves, "constructing" nature.

Habermas: The "Linguistic Turn" to the Theory of Communicative Action

It is certainly no coincidence that within one of his most important essays from the 1960s, Habermas refers critically to Marcuse's questioning of technological rationality. He argues against Marcuse that the idea of an "alternative technology" is bound to be self-contradictory, since technology had to be seen as a project of "the human species as a whole," not as any particular social project (Habermas 1968). Drawing on Gellner's anthropological explanation of technology as a result of human "organ deficits," Habermas finally resorts to a naturalistic foundation of technology. In his book Erkenntnis und Interesse (Knowledge and Human Interests) (1973), he refers to an "invariant relationship of the species to ambient nature,
determined by the functions of instrumental action" (49) and fixed in the long run by the "species-specific physical organisation of mankind" (57).

In this argument, technology is firstly attributed to the physical nature of humans, and secondly, it is directly connected to the structure of purposive-rational action or of work in general. Habermas was doubtless correct in stating that humans are inevitably bound to treat nature with technical means in the interest of self-preservation and that Marcuse's idea of an "alternative technology" remains fairly vague and questionable. But by rejecting Marcuse's criticism, he is also dismissing the important idea that technology, in its concrete historical form, is actually a socially constructed project shaped by certain conceptions of rationality, scientific models, economic interests, and so on (cf. also Whitebook 1979; Vogel 1996: 111ff.). Consequently, from Habermas's argument it would follow that the scientifically and technically mediated relations between humans and nature are not socially formed or constructed, but are anthropologically determined. This conviction leads him to neglect the dynamic relations between society and nature as a genuine and important field of Critical Theory's concern.\(^5\)

In Habermas's aforementioned essay, we find that he had already expressed quite clearly the basic differentiation between labor (or work) and interaction that was to guide his work until the Theory of Communicative Action (1987).\(^4\) Habermas argues that labor and interaction each follow different rationality types: formal purposive rationality on the one hand, and communicative rationality on the other. Hence, labor tends to be seen as a nonsocial form of action (see critically Giddens 1982) with the difference between purposive rationality and instrumental reason disappearing again as it did in Horkheimer and Adorno.

Communicative action and rationality, by contrast, are seen as the basic concepts and normative foundations of a renewed Critical Theory that claims to overcome the aporias of Horkheimer's and Adorno's critique of instrumental reason. But as a result, the material reproduction of society, the "systemic" realm of purposive-rational action, and the symbolic reproduction of the "lifeworld" based on communication are assigned by Habermas to strictly separated sectors of society. Consequently, the crises or "pathologies" of modernity do not consist of problems in the interrelations between societies and their natural environments, but in the overlapping of functional systemic imperatives onto the communicative life world. Therefore, within the conceptual framework of his theory of modernity, Habermas is neither able to adequately address environmental crises as a crucial feature of modern industrial societies, nor to find a convincing sociological approach to analyzing the societal causes and preconditions of these crises.\(^5\)

The turn to communicative action also touches on the topic of the normative foundations of Critical Theory that Habermas has made a central focus of his criticism of Horkheimer and Adorno. He argues that for Horkheimer and Adorno the normative foundations of Critical Theory have remained ambiguous and self-contradictory due to the aporetical argument of Dialectic of Enlightenment, in which rationality itself is identified in terms of domination. But the "paradigm shift" to communicative rationality leads to nature, or rather the relation between society and nature, becoming overlooked in the normative foundations of modernity. This is the case if these foundations, according to Habermas, are seen merely in terms of an ideal, undistorted communication between human individuals that is free from domination. Using well-founded reasons, he therefore rejects the idea of a normative or communicative attitude toward nature. But he fails to recognize that there might be different types of purposive-rational attitudes toward nature—and an instrumental reason that tends toward the overexploitation and destruction of a nature as a resource for human society turns out not to be truly "rational."\(^6\) Albeit in a rather abstract fashion, another normative idea of a nondestructive rational attitude toward nature has been outlined by Adorno when he envisages the aim of the "preservation of nature and its diversity within its treatment for human ends" (1972: 235).\(^6\)

Of course, in a more political context Habermas has taken notice of ecological problems and environmental movements. And yet, under the heading of "green problems," these are introduced into the Theory of Communicative Action in a rather unsatisfactory way:

The intervention of large-scale industry into ecological balances, the growing scarcity of nonrenewable natural resources, as well as demographic developments present industrially developed societies with major problems, but these challenges are abstract at first and call for technical and economic solutions, which must in turn be globally planned and implemented by administrative means. What sets off the protest is rather the tangible destruction of the urban environment, the despoliation of the countryside through housing developments, industrialization, and pollution; the impairment of health through the ravages of civilization, pharmaceutical side effects, and the like—that is, developments that noticeably affect the organic foundations of the lifeworld and make us drastically aware of standards of livability, of inflexible limits to the deprivation of sensual-aesthetic background needs. (1987: 394)

Here, environmental problems are split into a technical-administrative aspect ("abstract" problems of scale and scarcity) and a cultural and aesthetic one, whereby the latter—understood in terms of the "colonization of the lifeworld" and in conformity with the postmaterialism thesis—is seen as the major motivation and driving force for social movement and protest.\(^7\)

Given this background, it is not too surprising that, on the one hand, Critical Theory does not play a major role at present, neither in environmental debates nor in environmental science and that, on the other hand, environmental problems are not a focus of Critical Theory's current research interests. Only at the margins of the tradition are there some attempts to relate Critical Theory to current environmental problems and to the relationship between societies and nature (see, e.g., Schmid Noerr 1990; Wiegnerhaus 1996; Vogel 1996; Böhme 1999). Most of these attempts remain, however, in a philosophical rather than sociological context.

The result of historical retrospection appears to be ambiguous and somewhat paradoxical: In the course of its development toward a normative theory of modernity, Critical Theory has become ever more removed from the idea of a critical sociology addressing the dynamic constellations of individuals, society, and nature. The
attempt to render Critical Theory useful for the environmental debate must therefore look beyond the linguistic turn of Habermas, referring to the former program of the theory. But it should be remembered that the idea of a critical analysis of the changing historical constellations of individuals, nature, and society remained rather undeveloped and did not result in an original, interdisciplinary research program. I approach the task of reformulating and actualizing that idea in the third section. But first, I point out some arguments of Critical Theory that might help clarify the objectives and conceptual foundations of a social theory concerned with environmental problems and might contribute to overcoming some of the shortcomings of current environmental sociology.

CONTRIBUTIONS TO A SOCIAL THEORY OF ENVIRONMENTAL ISSUES

The contributions of Critical Theory to a sociological analysis of environmental issues are found on a conceptual rather than empirical level. Nevertheless, Critical Theory might also be able to stimulate new approaches to empirical research. On the conceptual level, the reconsideration of Critical Theory might help to clarify the theoretical foundations of a social theory and sociology open to environmental issues. This applies primarily to the substance and subject matter of sociology. In 1952, Adorno emphasized: “Sociology is not a human science. The issues with which it deals are not essentially related with the awareness or even unawaresness of the people who make up society. They relate primarily to the struggles between humans and nature and objective forms of society which can by no means be ascribed to the mind in the sense of a human inner disposition” (1972: 481 f., my translation).

This does, of course, not make sociology a whole into environmental sociology; inversely, it means that environmental sociology does not constitute a specific, separate area of the social sphere. Indeed, a relation with nature (both internal and external nature) is constitutive for almost all areas of the social sphere, even if the actors are unaware or not always aware of the fact. Instead of establishing a specialized and thematically demarcated subdiscipline, it is more a case of changing the conceptual basis of sociology and producing a specific research perspective. However, the Durkheim program of explaining social facts only by other social facts is not simply revoked. Social processes are seen not as determined by nonsocial ones, but as influenced by nonsocial “facts” according to the way these are socially perceived, interpreted, and transformed.

This view of social structures and processes calls for investigating to what extent and in what way those structures and processes are related to nature and form a part of society’s “struggle with nature.” With respect to the basic concept of society, this implies that sociology cannot afford to confine itself to an understanding of social systems as communicative systems and of social processes as exclusively communicative processes, as suggested by Luhmann. According to Critical Theory’s more comprehensive concept of sociology, social processes should, instead, be interpreted in terms of both symbolic and material activities. A corresponding implication is that a rigid partition of sociology into specialized subdisciplines is not very helpful for an analysis of environmental problems. This applies not only to the separation of environmental sociology from the sociology of science and technology (cf. Buttel and Taylor 1994), but also from cultural sociology, political sociology, and other fields.

Second, Critical Theory, claiming to analyze historical formations of society, human individuals, and nature, formulates a counterposition to the mainstream of modernization theories with their evolutionist assumptions. The functionalist concept of modern industrial society to which many modernization theories implicitly or explicitly refer turns out to be too general and abstract to offer an appropriate framework for analyzing the emergence and consequences of environmental problems. Hence, many attempts at sketching out “ecological modernization” as a new form and stage of industrial modernization (see, e.g., Huber 1995) still remain under the influence of evolutionary thinking and technological determinism (for criticism, see Wehling 1992; 1997). Recent efforts to widen the concept of ecological modernization to a more comprehensive theory of social change (see, e.g., Möll 1997; Spangenberg 1997) provide important insights but still require further conceptual clarification. This applies particularly with regard to the underlying concept of modernity and modernization, to the role of science and technology as supposed driving forces of ecological modernization, and to the involvement of different groups of social actors.

Nevertheless, the model of “late capitalism,” from which Critical Theory took its cue after World War II and which was strongly oriented toward the social democratic welfare state of the 1960s and 1970s, has itself become historically outdated and requires rethinking. Both in its Horkheimer-Adorno and in its Habermas version (Habermas 1973b), this model (referred to in a different theoretical context as “Fordism”) was built on the assumption of successful political regulation of capitalist economics and their contradictions. Yet, this specific constellation of social structure, forms of industrial appropriation of nature, relationships of power and political regulations, technological progress, and individual behavioral patterns has itself been subject to radical change since the 1970s. Of crucial importance here is actually that the linkage among economic growth, technological innovation, and social welfare and integration has become extremely fragile. But awareness of the limits of economic growth is also among the most important of these social changes. New arenas of political conflict and negotiations are arising, along with new institutions; the technological basis of industrial production as well as economic structures and processes are being transformed (a process commonly referred to as “globalization”); the role of the individual in society is changing; and so on. A historical actualization of Critical Theory that picks up these phenomena would certainly demonstrate a considerable degree of contiguity with the project of a theory of reflexive modernization (as a historical self-reflection of modernization theory) pursued by Beck and others (see Beck, Giddens, and Lash 1994).
Methodological “Anti-individualism”

On the empirical level, the Critical Theory thesis maintaining that the relationship to nature is inseparable from the relationship of the individual and society is above all in a position to stimulate new social science approaches toward environmental issues. In Adorno’s emphasis on “objective forms of action” lies a clear counterposition to the methodological individualism that, at least in Germany, governs a large proportion of the empirical studies in the field of environmental social science in the wake of both rational choice theories and psychological attitudinal research. In contrast with this, the authors of the Institute of Social Research state rather harshly: “Even the biographical single person represents a social category. They are determined solely within a life context with others, which builds their social character; it is only in this context that their life is given meaning under given social conditions; it is only within this context that this person, a social character mask, can possibly be seen as an individual” (Institut für Sozialforschung 1956, 43, my translation).8

The focus is therefore not on the rationality of the individual, who is an artificially isolated actor calculating costs and benefits, but on processes of social integration and the construction of social meanings and symbolic structures with a fundamental effect on individual behavior. Without denying the shortcomings of Horkheimer’s and Adorno’s theory of “culture industry,” we should, however, recognize that the authors have clearly identified the vital role of mass media and communication technology for social integration and social conformity. Moreover, they have also pointed out that media, like television, do not simply offer “right” or “wrong” images of reality, but change modes of perceiving reality, thus creating a new understanding of what is “real.” Such insights appear to be of great relevance, particularly for understanding environmental problems. It might therefore be fruitful to separate the analysis of culture industry from the hermetic, philosophical context given by the Dialectic of Enlightenment. The focus of interest then should be on empirical studies analyzing how symbolic structures and meanings are created and reproduced by, or ascribed to, certain cultural and technical objects.9

If we consider, for instance, a complex social phenomenon with great ecological impact such as automobile traffic, we recognize the significance of an approach that takes into account the symbolic structures of societies. Motoring is a multifaceted social practice in which “rational” preoccupations like getting from A to B at a minimum cost are intricately entwined with patterns of social integration, the demonstration of social status, socially shaped and technically mediated experience of nature and the self, and so on.10 Thus, we find that “automobility” should be interpreted as a both material and symbolic phenomenon. Embedded in a web of symbolic meanings and distinctions, automobility is not only changing the spatial and temporal scales of social processes, but is also installing new cultural norms and patterns of behavior. Burkart (1994), therefore, in one of the as yet rare sociologically reflected studies on automobile traffic, speaks of “social integration by automobility” and of the car as “part of a way of life.” Any scientific approach or political proposal failing to take into account this intertwining of different levels of meaning, assuming instead that only money and time constitute the determinants of “rational travel behavior,” is unlikely to prove successful.

On a more general level, the example of automobility emphasizes that (individual) environmental behavior as a main focus of environmental sociology as well as psychology is frequently no more than an artificially isolated aspect in an overlapping, socially structured practical context. Critical Theory, while insisting on the societal influences on individuals, is able to sensitize awareness of this reduction and to reintegrate such phenomena into their historical and social context. Adorno, inspired by Benjamin with phrases like “sociological micrology” (“soziologische Mikrologie”) or “thinking in constellations” (1969), has attempted to outline a sociological methodology capable of deciphering the historical constitution of social phenomena. “Cognition of the object in its constellation is cognition of the process stored in the object” (Adorno 1973: 163).

Nature and “Nonidentity”

Critical Theory (as well as other approaches) is frequently criticized for continuing to speak of nature, but not of “environment.” Nature, it is usually argued, is an outdated, “essentialist” substantial term dating from the nineteenth century, whereas environment is a functional term always referring to the relation to an organism or a social system. These arguments are certainly of the utmost significance, but before relinquishing the term “nature,” I should delve a little deeper into its possible significance for social theory and environmental sociology.

It has already been shown that in Critical Theory, nature does not figure as a normative counterpart to society. Horkheimer and Adorno do not see a way out of the self-destructive dialectics of enlightenment in society’s ”learning” from nature (even if the concept of “mineness” in Adorno’s “Aesthetic Theory” is evaluated in a very positive light), but merely in society’s self-reflective recognition that it does not exist in complete opposition to nature and that reason and culture are also nature. In addition, nature is not conceived of by critical theory as the realm of that which is given and unchangeable. On the contrary, as quoted earlier, nature with which societies or individuals are confronted has always been subject to social transformation and cultural interpretation. Therefore, for human societies, nature does not exist without and outside of these socially constructed mediations.

But at the same time, the term “nature” implies to a greater extent than “environment” an awareness of difference from and “nonidentity” with human societies. While, on the one hand, nature cannot be positively determined or defined outside a socially constituted reference framework, it is, on the other hand, not entirely socially constructed. Far more, there exists a difference that society cannot remove. Against the idealistic underpinning of dialectical philosophy of history from Hegel to Lukács, this difference has been addressed by Adorno in his Negative Dialectics, speaking of the “primacy of the object” and of the “nonidentical.” In this regard, I do not agree with Vogel’s criticism that the latter notion leads back to a search or
nostalgia for nature as immediacy (cf. Vogel 1996: 84ff). This is only the case if one understands the nonidentical as some kind of positive or "really existent" object beyond social mediation. Instead, we should conceive of "nonidentity" as difference within any mediation, thus being not a substantial but a relational category. Adorno himself, although sometimes really tending to the immediacy of experience, expresses this in similar theoretical terms: The primacy of the object, he writes, "does not mean that objectivity is something immediate, that we might forget our critique of naive realism. To grant precedence to the object means to make progressive qualitative distinctions between things which in themselves are indirect, it means a moment in dialectics—not beyond dialectics, but articulated in dialectics" (1973: 184).

Here, we can find a model for conceiving nature that might overcome the shortcomings of both epistemological realism and radicalized constructionism reducing nature to nothing but a social construction. Contrary to Adorno, however, we should not speak of the "primacy of the object," but rather of the primacy of mediation or of relations between subject and object, society and nature. At the same time, the concept of nonidentity as a critical concept may help us to keep in mind that domination of nature (or environmental planning) will never be perfect and complete and that human societies must always reckon with unexpected and uncontrollable side effects.

Another important aspect of the concept of nature is that, unlike environment, it allows a connection between internal and external nature. What is usually referred to as "environment" or environmental problems concerns problems affecting "external" ecosystems or the "built" environment (see, e.g., Catton and Dunlap 1978: 44). The concept of nature broadens the perspective to include interrelations between external environmental changes and the human body. This applies not only to environmentally caused diseases, but also to changes in forms of human perception and sensibility through to scientific-technological transformations of human body functions themselves, for instance via reproductive medicine and genetic engineering. This again does not imply normative reference to a supposedly unchangeable "human nature" as a yardstick for political action; on the contrary, it has to be recognized that human nature, too, is subject to social and technological changes. But with the theoretical approach of Critical Theory, we can at least identify changes in the human body as an important and inseparable dimension of "environmental" dangers. This might also be able to prevent the dominance of technological or even technocratic approaches that restrict environmental problems to a lack of efficiency in exploiting and using the resources of the external environment.

**Toward a Critical Theory of Society's Relationships to Nature**

The concept of social theory referring to historical constellations of individuals, society, and nature has not become the mainstream of Critical Theory, neither in its theoretical reflections nor in empirical research. During the 1950s and 1960s, empirical research of the Institute of Social Research focused mainly on industrial relations, studies on prejudice and authoritarianism, and on cultural issues. Only in some of his more theoretical reflections on the essence and reach of social theory did Adorno refer to the idea of incorporating society-nature relations into the field of social theory. But, as illustrated earlier, with Habermas's turn to a theory of communicative action, this line of argument was put on ice for a time. Within the framework of Habermas's theory of communicative action, Critical Theory was neither able to adequately incorporate environmental issues, nor to address science and technology as an important field of social science research.

Hence, assuming that Critical Theory provides an appropriate conceptual framework as well as a wide range of insights (albeit often implicit) that are relevant and useful for analyzing the constellations of individuals, society, and nature, we should try to reconsider and actualize the theoretical approach and reorganize the various findings. This of course implies reformulating the original idea in line with the present political, economic, cultural, and scientific contexts. On a conceptual level, at the Institute for Social Ecological Research this idea has been actualized within the framework of what we call "critical theory of society's socially structured relationships to nature" ("kritische Theorie der gesellschaftsspezifischen Naturverhältnisse") (see Jahn 1990; Jahn and Welhing 1998a). In the first instance, this conception draws on Benjamin's aforementioned switch in perspective from domination of nature to mastery of society-nature relations. In fact, what societies or human individuals do is to structure, regulate, and symbolize their relationships to nature; the idea of "dominating" nature is only one historically and culturally specific form of regulating these relationships. The second basic assumption on which the theory of society's relationships to nature works lies in the fact that we are confronted with socially constructed forms of mediation between society and nature (which in the recent works of Latour [1993] are termed "hybrids"), rather than with pure "social facts" or mere "natural objects." This basic idea has been clearly expressed by Adorno: "The social process is neither solely society nor solely nature but human metabolism with the latter, permanent mediation between the two instances. The natural element present at all stages cannot be extracted from its societal form without harming the phenomena" (1972: 221, my translation).

The third important assumption claims that human action and social practice may not be seen as either material or symbolic, instead, these are only two dimensions of human action and social processes, separable only analytically. Thus, society's relationships to nature in different fields of action (like, e.g., production, nutrition, reproduction, mobility, and so on) are regulated both on a material and on a symbolic level. This can be illustrated by taking nutrition as an example: The material forms of producing, distributing, and also preparing and consuming food are evidently closely connected not only with economic and technological structures, but also with diverse symbolic practices ranging from cultural-religious eating taboos through socially shaped "nutritional styles" and "eating cultures" to scientific recommendations and legal norms. Societal relationships to nature, therefore, do not
only consist of material metabolism, but also comprise the social, cultural, religious and—with ever-increasing importance—scientific projections and constructions of nature.

Given this background, the concept of society’s socially structured relationships to nature can be outlined using the following four points:

1. The notion of “society’s socially structured relationships to nature” implies that society and nature find themselves within a structure of interrelation and mediation that can be dissolved neither in one direction nor the other, but that can and do become modified toward either “pole.” In particular, this means that an ontological or normative definition of nature, regardless of societal forms of perception and practice, has its essence swept away. Thus, natural science also represents just one of several approaches to nature; it is itself socially shaped and—as a form of highly decontextualized knowledge—finds itself in competition with, for instance, local knowledge of social actors (farmers, women, and so on).

2. Another consideration, however, is that we are faced with the mediation of a difference. This is to say, nature is more than and different from just a social construction. Nevertheless, this is not an essentialist statement; by contrast, the difference itself is constituted only by and within mediation. Thus, being a “nonidentical” element within mediation, nature, however, exhibits a materiality and potentiality of its own so that mediation with human needs and ends may well fail; social objectives are not attained, or else other, nonintentional, noncontrollable side effects are triggered. On the one hand, scientific knowledge provides approaches for opening up this materiality but fails, on the other hand, to provide any “objective,” context-independent cognition of its themes. And in many cases, instead of producing stable bases for action, uncertainty is often created or heightened as a result of science.

3. In contrast to the (at least German) sociological mainstream, the phrase draws attention to the fact that social action requires analysis not only in its symbolic and communicative but also in its material dimensions. For a critical theory of society’s socially structured relationships to nature, it is precisely the connection between these two dimensions that becomes the focus of interest. Here, it is not merely a question of social action relating to nature both symbolically and materially, but also of socially constructed and interpreted “natural facts” and “hybrid objects” (like the “greenhouse effect” or the “mad cow disease”) becoming included in action networks and “acting” there with some social consequence (see Latour 1993).

4. There is little point in talking about one socially constructed relationship to nature that is assumed to be located on a general, normative level and to be modified only via cultural processes of moral learning. Instead, the regulation and structuring of society’s relationships to nature via symbolic and material practices need to be analyzed in different social spheres of action such as agriculture and nutrition, leisure and tourism, mobility, and so on. Since there is no overlapping cultural idea of the (appropriate) relationship of society to nature, the regulation of society’s relationships to nature in various spheres of action will occur in very differing, even opposing and antagonistic forms: scientificization can stand alongside moralization, “novel food” alongside natural foods, and, usually, we can observe social disputes about what nature actually is or the “right” approach to nature in a certain field. This can (and does) lead to certain social practices becoming dominant with, above all, economic or scientific-technical regulatory forms shaping and reshaping society’s relationships to nature to an ever-growing degree. But such hegemonies ultimately remain contingent and contestable: transformations of societal relations to nature must therefore represent a homogenous and parallel process following a supposedly universal, evolutionary logic of scientific, technological, or economic rationality. This is where the idea of a theory of societal relationships to nature differs rather sharply from the idealistic and harmonistic assumptions of modernization theory.

The concept of society’s relationships to nature is of course not fully developed as yet. Moreover, it is not primarily intended to provide a basic general theory, but rather a conceptual or heuristic framework for analyzing environmental problems and their dynamics in present societies. This entails guiding empirical research as well as stimulating solutions that are not restricted to technological innovations from the start, but include or even favor social innovations and structural changes. Referring again to the example of automobile traffic, we should stress that reducing the fuel consumption and toxic emissions of the single car by technical means is proving to be a very limited and presumably counterproductive “end-of-pipe” strategy. The truth of this will become particularly apparent if the technical reduction in consumption and emissions is offset by a growth in car production and utilization. Instead, critical analysis must address the social needs for mobility as well as the cultural and symbolic meanings of mobility within certain social groups and discover social and political strategies to “decouple” mobility, as a not only physical and technological but also social and cultural phenomenon, from automobility.

However, it is quite apparent that analysis of society’s relationships to nature requires problem-oriented interdisciplinary cooperation, not only among social science disciplines, but also among social, natural, and technological sciences. Understood in this way, “social-ecological research” may be considered as a necessary widening of Critical Theory’s interdisciplinary project. Yet, while natural scientific knowledge is indispensable even for finding and describing environmental problems as well as for outlining and assessing possible solutions, social science should not be restricted or restrict itself to some kind of “behavioral engineering” employed merely to increase social acceptance for technical solutions. Instead, critical social theory should also analyze how the problems under review are structured by politics, the economy, and, of course, science itself, thereby following Wynne’s argument “that the construction of scientific knowledge is less completely determined by nature than conventional approaches assume” (1994: 184).
Beyond the Realism-Constructionism Divide?

The most controversial issue in contemporary environmental sociology should be seen in the dispute between "social constructionism" and "realism" (see, e.g., Dickens 1996: 71ff; Birmingham and Cooper 1999; Grundmann and Stehr 2000). In this regard, there are two reasons why I think that the concept of society's relationships to nature offers an initial clue on how to, if not surmount, then at least organize productively the aporias of "naturalist" and "sociocentric," or "realist" and "constructionist" approaches to environmental issues. First, this concept claims that nature or environment cannot be addressed beyond or outside of societal forms of mediation. Yet, while thus being "social constructions," environmental problems at the same time refer to the materiality of nature that both enables and constrains the process of social construction (see Redclift and Woodgate 1994). Critical analysis and reconstruction of how the sciences (both natural and social) define environmental problems, therefore, does not necessarily imply denying the existence of environmental problems and their materiality.35

Second, assuming that society's relationships to nature are regulated not only materially, but also symbolically, then we are not even able to understand the social causes and consequences of environmental problems once we fade out the role of science or culture in defining them and thus preforming social and political reactions. For societies or individuals do not necessarily react to the problems as they "really are," but as they are described by science, by politics, by social movements, by mass media, and so on. This applies especially in the case of many environmental problems (like global warming, depletion of the ozone layer, and so on) whose "reality" and consequences are no longer felt immediately, sensually, and physically, but solely as the result of complex scientific modeling and measurement, with a high degree of uncertainty.

Against this background, the following antagonism suggested by Dunlap and Carman appears to be rather misleading: "Limiting sociological attention to the ways in which global environmental problems have been recognized, defined and legitimated, inhibits our contributions to understanding causes, consequences and possible amelioration of such problems" (1994: 7). Here, the authors seem to imply that analyzing causes, consequences, and possible amelioration of environmental problems could strictly be separated from the ways they are recognized, defined, and so on. Instead, the focus of critical analysis should be on the complex, nonlinear, and at least partly contingent interrelations between material and symbolic dimensions of environmental problems, and between material and symbolic regulations of society's relationships to nature.

Thus, one lesson we could and should learn from Critical Theory as an interdisciplinary project is that capitalist economy, politics, science and technology, mass media, and so on interfere and influence each other, thus driving the dynamics of society, individuals, and nature. Sociological analysis of environmental problems, therefore, has to be closely linked to a comprehensive and historically reflected social theory from which nature as the "nonidentical," on the one hand, may not be excluded. On the other hand, we have to take into account that, in Adorno's terms, the natural can never be "extracted from its societal form." Critical Theory, at least, should make us sensitive to this tension and its theoretical and political consequences.

NOTES

1. Instead, the editors list as fruitful approaches rational choice theory, systems theory, modernization theory, and human ecology.

2. This corresponds closely to Hochheimer's and Adorno's explanation of German Nazi anti-Semitism, which they conceive of as a blind "revolt of nature" (Hochheimer 1947), instrumented by political power.

3. Quite similar criticism of Habermas's revisions of Critical Theory comes from Eckersley (1990). Yet, unlike those of Eckersley, my objections do not attempt to replace Habermas's anthropocentric theoretical framework by an "ecocentric" one, but aim at reopening his anthropological and ultimately naturalistic conception of society-nature relations to historical and sociological reflection.

4. The further development of Habermas's theoretical project can only be sketched out here very briefly (for a more detailed argumentation, cf. Wehling 1992).

5. However, an important attempt at integrating environmental thinking into Habermas's framework has been made by Dryzek (1987). Yet, it ultimately remains ambiguous how his concept of ecological rationality could be defined in terms of the theory of communicative action. If, on the one hand, it is conceived of as a specific historical form of purposive rationality, then one would have to admit that science, technology, and (instruments) rationality are in fact socially and historically shaped rather than anthropologically determined. If, on the other hand, ecological rationality is considered to be an application of normative or aesthetic rationality to nature, then Habermas's rigid separation among instrumental, normative, and aesthetic rationality is called into question.

6. Apparently, this is not an "ecocentric" perspective as suggested by Eckersley, but a reflective, noninstrumentalist form of "anthropocentric" rationality.

7. Like many other approaches in environmental social theory, that of Habermas would fail to address and explain Third World environmentalism.

8. Doubtless, the constellation of society and individual has undergone dramatic change during the last two decades due, not at least, to the hegemony of neoliberalism and deregulation. Although this change certainly can be described as "individualization," it does not necessarily imply that the individuals have become more "autonomous" or "free." As Bauman has put it: "We are all individuals now; not by choice, though, but by necessity. We are individuals de facto, self-identification, self-management and self-assessment, and above all self-sufficiency in the performance of all these three tasks, is our duty whether or not we command the resources which the performance of the new duty demands" (1999: 127).

9. Adorno's work on television, although dating from the 1950s, could still prove stimulating for such an approach (see, e.g., Adorno 1998).

10. Within a research project into "viable forms of urban mobility," carried out at the Institute of Social Ecological Research (ISOE), a conceptual approach has been developed that attempts to take into account this complexity on the level of empirical research. Mobility
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World-System Theory and the Environment: Toward a New Synthesis

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The U.S. National Research Council recently pointed out that “[i]t is economically address the human dimensions of global change will require analyses at the global scale... Analysis of the human dimensions of global change requires a theoretical structure capable of addressing varying time scales, particularly the longer ones that correspond to the processes of physical and ecological change” (Steen, Young, and Druckman 1992: 178, 179). We believe that world-system theory provides such a theoretical structure. It has the strategic advantages of combining global scope, historical perspective, theory on international political economy, and well-developed empirical techniques. A relatively recent addition to the field, world-system research has grown from its European and Latin American roots to gain a place in U.S. social science particularly by pioneering empirical transnational analyses over long time spans.

Some environmental questions seem particularly well suited for attention from World-System Theory (WST). For example, are there higher-level social structural forces that determine different nations’ environmental policies and impacts? Looking backward in time, has the cyclical nature of capitalist production manifested itself as periodicities in environmental effects such as emissions added to the atmosphere? More broadly, what are the precise links between social classes, economic growth, and environmental damage?

One contribution of WST that we believe is pivotal to addressing these questions is its focus on the historical legacy of a country’s “incorporation” into the global economy. This burden of history channels the avenues of development available to a