

THE ENVIRONMENTAL DAMAGE: SOCIOLOGICAL BACKGROUND AND MEANS FOR PREVENTION AND COMPENSATION

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...The atmosphere of London can never be as clean as that of a country district: three and a half million lungs and 350 000 furnaces crowded into an area of sixty to eighty square miles, consume an enormous amount of oxygen, which restores itself only with difficulty, since city architecture hampers ventilation. The carbon dioxide generated by breathing and burning remains in the streets because of its specific gravity, and the air currents sweep over the rooftops. The lungs of the residents do not receive an adequate amount of oxygen, the result of which is the debilitation of body and soul and the sapping of the vitality.

This early description of *The Situation of the Working Class in England*, by Friedrich Engels, shows that damage to the environment was long ago recognized as dangerous. But only part of the people was affected: these who could not live in the “West End”, who did not possess country homes, and could not even afford a periodic renewal in the fresh country air. The difficult and punishing living conditions in the dark backyards of the industrial cities, in proximity to noisy, smoking factories, were borne by the working class—in the beginning, because the only alternative was unemployment and misery, subsequently, because such conditions came to be accepted as part of the condition of the working class. Only as the sky darkened over entire regions, as lakes and rivers were rendered unfit for swimming and fishing, as fresh water was no longer available even for industry and as immense mountains of waste materials piled up on the edges of the cities—only then did the middle class perceive a

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problem, which it could quickly and effectively articulate and attempt to solve under the name "Protection of the Environment".

This birth of a public issue indicates already that there is a sociological background to a problem which is discussed today almost exclusively under its technical and legal aspects. It points to necessary differentiations, since not everyone is affected equally, and to implications of political economy which are, again, the center of interest because of the discussion of the environment. As with all social problems, what is first required is to explain the environmental damage, before one can attempt to find reasonable and efficacious solutions. If this explanation is still incomplete it is because, until now, the major part of the environmental research has been left to the lawyers and technicians. But as the pressure for interdisciplinary cooperation in this sphere increases, more and detailed knowledge of the social causes and factors which lead to environmental damage will be acquired.

1) Technology and Industrial Society as Sources of Environmental Injuries

At first glance, damage to the environment may be traced to purely technical-scientific factors. The employment of machines in industrial production, of chemicals in agriculture, of motor vehicles and airplanes for mobility, and of the atom as a source of energy, have always had side effects which encroach upon the "household" of nature and disturb the ecological balance. These factors have been criticized since the beginning of our technical era, without inhibiting the further development of damaging products. Even an apocalyptical view, as that offered by the "Club of Rome" in its theoretical projections,¹ has yet failed to affect our economic behaviour substantially. Nevertheless, it cannot be assumed that expanding technology is a self-propelling process, the control of which has slipped from the hands of man. Not technology itself, rather society, which takes advantage of it, destroys our natural environment. The question is, therefore, which characteristics of the industrial societies elicit these injurious consequences.

Firstly, these societies must be viewed in their global ensemble, which is characterized primarily by an unrelenting competition for an increasing gross national product. In a world determined by economic values, in the last resort only the volume of production decides over power and influence. (Only the People's Republic of China, which does not participate in this competition, is a thought-provoking exception.)

¹ Cf. Dennis Meadows, u.a., *Die Grenzen des Wachstums*, Reinbek 1973.

The per-capita growth rate varies considerably, as shown in the following table:

P. R. of Chine	0.3%
India	1.0%
Russia	5.8%
USA	3.4%
Pakistan	3.1%
Indonesia	0.8%
Japan	9.9%
Brazil	1.6%
Nigeria	—0.3%
West Germany	3.4%

Table 1: Growth-rates of per-capita GNP 1961-63 (from D. Meadows, *supra*, p. 33).

In the last two decades, the total world industrial production has increased exponentially. The annual growth-rate of all countries between 1963 and 1968, averaged 7 per cent.

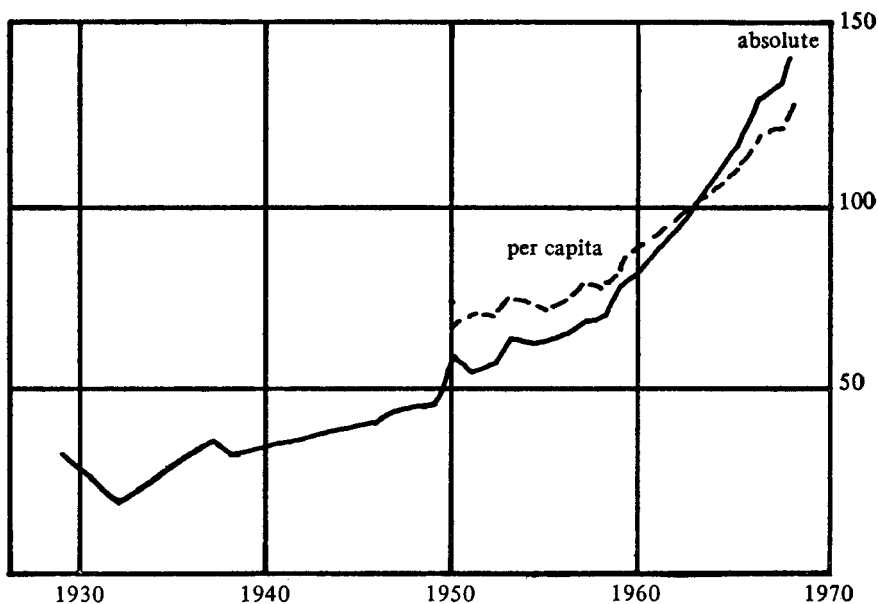


Chart 1: World Industrial Production 1930-70 (Source: D. Meadows, a.o., *supra*, p. 24).

Considering these figures, it is no surprise that the natural resources are taxed too heavily. Every product requires raw materials, energy, air, water, etc. — “free goods”, the exhaustion of which can already be calculated for the next century.

This competition for an increasing Gross National Product can be measured by subjective (psychological), as well as objective (sociological) factors. The subjective side is the augmenting pressure on the individual to perform (stress), which intensifies in the course of the rationalization of the industry. Also the manifestations of alienation among low income workers elicited by the division of production into merely repetitive segments must be mentioned here.² The totality of the process of manual production and the feeling of accomplishment are destroyed by the piecemeal technical-mechanical division of labour into many disjointed, monotonous, and meaningless fragments. The worker on the assembly line becomes himself nearly part of the machine, and all his creative impulses are destroyed. He perceives of himself as harnessed to an anonymous, technical, and organizational “system”, which is beyond his grasp, leaving him socially homeless in the modern work structure.³ These socially injurious aspects of the process of industrialization ought, in the view of *Johan Galtung*, the Director of the International Peace Research Institute in Oslo, to be treated as part of the environmental issue. He stated recently that a problem is only defined as an issue when it appears resolvable within a system. What seems unresolvable is suppressed. According to this sociologist, the major problem looming over our society is the “Pollution of Mankind”, which arises above all from the fact that 90 per cent of mankind is condemned to monotonous work. Because this problem appears insurmountable in capitalist as well as socialist systems it is suppressed. On the other hand, environmental pollution is an acceptable problem because the technological means for its mastery exist.⁴

Of the objective factors, the uncontrolled population explosion stands in the forefront. In 1650, before the advent of the industrial revolution, the world population was approximately five hundred million (500,000,000), with a yearly growth-rate of some 0.3 per cent. A 100 per cent increase could then be anticipated within 250 years. By 1970, with a world population of some 3.6 billion and a growth-rate of 2.1 per cent, a like increase could occur within 33 years.⁵

² Cf. Joachim Israel, *Der Begriff Entfremdung*, Reinbek 1972.

³ Helmut Schelsky, “Industrie — und Betriebssoziologie” in: A. Gehlen, H. Schelsky, *Soziologie*, 3 Ed., 1955, p. 163 s.

⁴ NZZ of 24/6/74.

⁵ D. Meadows; *supra*, p. 26.

The following growth-rate curve results from these data.

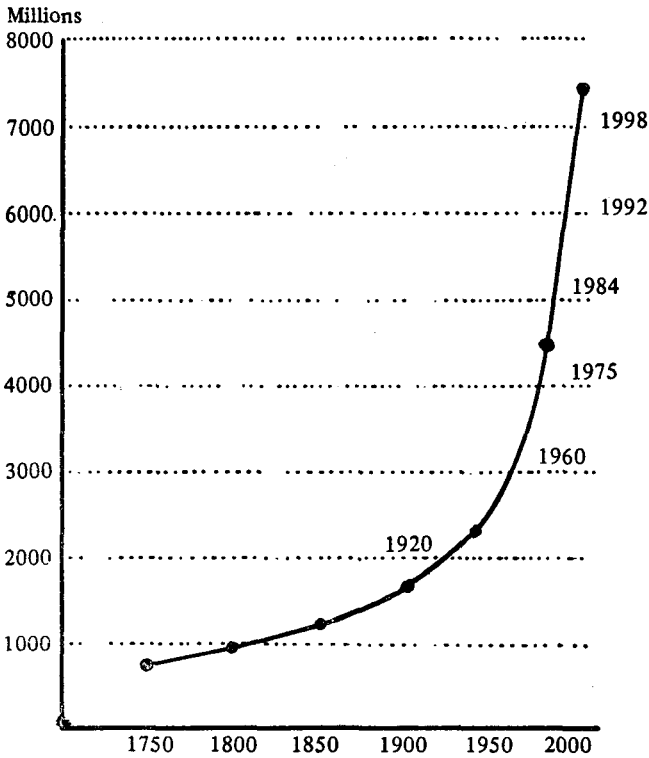


Chart 2: Growth-rate of the World Population for the Period 1950 to 2000 (Source: J. S. R. Eyre, "Man the Pest, Eine Frage des Überlebens", in: *Kursbuch* 33, 1973, p. 54).

This population explosion is the cause as well as the consequence of industrialization. As a cause, it affects most of all the developing countries who because of the increasing life expectancy are compelled to find ways of creating employment for a greater work-force and of stimulating agricultural production. As a consequence, it occurs wherever living conditions are improved and where state and industry provide incentives for the creation of a reservoir of labour.

Independent of the background of this growth-rate, it is a fact that the increasing settlement of the earth changes its ecological balance. The constant pressure to produce more food supplies hinders the growth of the natural flora and fauna, leads to erosion of the soil, destruction of the

forests, and depletion of the fish resources of the sea. It is, therefore, the population explosion by itself which brings about the constantly changing and deteriorating environmental conditions. In addition, a qualitative factor usually applies: The population is not equally distributed, it is concentrated in ever growing cities and industrial areas. Today, everything included under the title "environmental damage" is multiplying here in perilous proportions, from dehumanized city architecture to threats of plagues, illnesses, and explosions which could occur through simple, technical failures. The restricting processes of nature, such as the cleaning of water and air and the rejuvenation or regeneration of plant and animal life, are short-circuited and sometimes partly, sometimes wholly, unrestituted through technical provisions.

No one questions the functional legitimacy of technical equipment, at least when economic efficiency is the measure of validity. It is economically expedient to settle the population around production centers, to invest a minimum of capital in protective measures, and to improve transportation facilities — even if it is to the disadvantage of nature and landscape. But how do these industrial societies, which all show similar patterns of behaviour, always manage to give priority to economic goals? *Max Weber's* analysis in his essay on "Protestant Ethics and the Spirit of Capitalism", in which he traces back the origins of the philosophy of acquisition for its own sake to the shifting of religious ascetic claims into the daily work life ("innerweltliche Askese" or "secular asceticism"),⁶ has become famous.

But this analysis gives only a one-sided picture. The acquisitive economic subject is, in all societies, only one role of man. Leisure, love, faith and many other objectives compete with economic ends so that the demonstration of the existence of economic objectives explains little concerning the actual human social behaviour. Modern sociology explains this behaviour, not as a result of "mentality" or values of the individual, but rather of the expectations of the social environment. This refers to the relevant social structure and the mechanism for selection which channel individual behaviour into specific directions. If society is capable of singling out certain spheres in which the multiple goals no longer have to compete and be harmonized, but where *one* goal has absolute and indisputed priority, then these spheres will fulfill their functions relatively free of conflicts.

The system theory, as advocated by sociologists, especially *T. Parsons* and *N. Luhmann*, sees in the successful differentiation of such subsystems out of the society the secret of the remarkable efficiency with which the

⁶ Cf. Max Weber, *Wirtschaft und Gesellschaft*, Cologne-Berlin, 1964, p. 43 ss.

industrial societies fulfill their diverse tasks. If a traditional society has no differentiated legal system at its disposal, judges will include "corrupting" non-legal considerations in their decision-making processes, for example, when they feel obligated to a friend or family member. Such conflicts of goals are rare exceptions in the legal systems of the industrial societies. There is no doubt, generally, as to which goals can be accomplished by lawyers professionally. The situation is similar in other subsystems. In the religious system political goals must defer; in the scientific system family considerations are neglected; in traffic a flirt has no place.

According to *Luhmann* one can assume that the evolution of human society is characterized by increasing functional differentiation. This produces higher selectivity, but permits in the various subsystems a greater variety of possibilities for task fulfillment and the satisfaction of needs.⁷

In the wake of this societal evolution, a specific *economic subsystem* has developed.

Naturally, differentiation cannot mean that the economy separates itself out from the society, that communication is interrupted, that interdependence is surrendered. It is not a secession of the economy from the society, but a restructuring of interdependencies which changes the traditional direct and detailed interdependence of all subsystems into an indirect one using system/environment-relations.⁸

Differentiation makes possible not economic self-sufficiency but rather a high degree of autonomy, which means self-regulation of the economy.

Above all, through the mechanism of money, the economy develops its own values, purposes, norms, criteria of rationality, and its own theories on which the behavioural choices are oriented within its sphere. The selfreliance of such premises for decision is demonstrated by the fact that they claim validity only within their specific system and do not have to be accounted for before the society as a whole.⁹

Actions, which otherwise would be undertaken only after complex considerations of the effects on the total society, can thus be specialized on purely economic functions: political, legal, technical, moral, and sentimental criteria can be banished or at any rate relegated to the back-

⁷ N. Luhmann, "Soziologie als Theorie sozialer Systeme" in: *Soziologische Aufklärung*, Cologne and Opladen 1970, p. 113 ss.

⁸ N. Luhmann, "Wirtschaft als soziales Systems" in *Soziologische Aufklärung*, p. 204 ss.

⁹ *Ibidem*, p. 210 s.

ground. Repeatedly, they are only used as a vocabulary for the public explanation of decisions which pursue exclusively economic goals.

In this way, the conception of, and generation of support for, economic decisions, even those disadvantageous to the society as a whole, can be explained. The question of migrant workers is determined, both in the USA and Europe, exclusively according to economic criteria, the consumer is regarded only in terms of purchase power, and all injuries which today are defined as environmentally destructive, are social costs which enter neither into the corporate loss-and-profits-statements nor into the budgets of state-planned economies.

As *Luhmann* remarked, in a fully functionally differentiated society the human being is placed in an outsider position.¹⁰

The question of, why the economic subsystem has assumed functional primacy within society, remains. The attempts to explain come from very different directions. The old, natural law theory of the economy, as well as the materialistic theory, attempt to justify its quasi-natural primacy on the satisfaction of basic material needs by the economy. In this century, *Ogburn* advanced the theory that a necessary "cultural lag" of political and cultural structures behind technical and economic achievements results in developed societies. According to this theory, it is almost obligatory that ethical and political traditions be abandoned in the realization of economic goals. Assertions of this sort, however, have to be specified, in order to take into consideration the particular political-economic facts of the various societies suffering under their economic primacy.

Although the earlier described phenomena can be observed in all industrial societies regardless of political ideology, private capital and state-planned economies can be distinguished on this point. In this context, it is especially interesting to examine the concrete conditions under which the economic decision-makers succeed in achieving their goals at the expense of the ecological balance and, finally, of the whole society.

2) *Environmental Damage in the Free Enterprise System*

It is the indisputed principle of the capitalist economy that every economic subject within the system is permitted to act solely in his own interest.

It is . . . totally false to characterize the real duty of the entrepreneur as one to produce as much as possible, as cheaply as possible. His true motive is profit and when he produces plenty and cheaply, that is so because this is — at least under competitive conditions the only way to

¹⁰ *Luhmann, supra*, p. 229.

obtain profits. The secret of the free enterprise system is that it relates the self-interest to the actual fulfilling of an economic function. This function one could call supplying sufficient goods to cover all needs...¹¹

If production of a sufficient supply of goods is only an incidental resulting social function of the capitalist economy, other social consequences are, at least, similarly accidental occurrences. However, in western economic theory it has been accepted — in rejection of liberalist economic thought — that certain factors, as e.g., full employment or equitable distribution of income, cannot be left to such accidents — especially since satisfactory results in these matters are by no means as certain as in the earlier discussed market function of the supplying of goods

Through market-oriented economic policy, the government employs directing measures which leave the economic system basically untouched.¹² The goal was and remains the reconstruction of the free play of market forces; in other words, the self-steering economic mechanism, which was destroyed by market distortions and power concentrations. In this way, many consequences and side effects of economic behaviour, desirable for the society as a whole, are secured, as the economic development of the capitalist societies has shown — a situation perceived as a “painful puzzle” by the Marxist critics of this system.¹³ The question is, however, whether that is valid for the avoidance of environmental damage, because here past experience is to the contrary.

In free enterprise societies there exists an imminent tendency to endanger the environment,

because, in the free enterprise, decentralized system, the problem of motivation (the incentive for economic action), as well as the problem of allocation (the combination of all factors) are solved simultaneously through the ‘economic stimulus’ of the individual income.¹⁴

According to the microeconomic strategy of capital accumulation and the maximizing of profits, each economic unit behaves in conformity with the system if it exploits all means of lowering costs, even if it produces with no regard for environmental values.

¹¹ Erich Preiser, *Nationalökonomie heute*, 2 Ed., Munich 1960, p. 45.

¹² Cf. Andreas Paulsen, *Allgemeine Volkswirtschaftslehre*, vol. 1, Berlin 1959, p. 41.

¹³ So e.g. Claus Offe, “Krisen des Krisenmanagements: Elemente einer politischen Krisentheorie” in: M. Jänicke (ed.), *Herrschaft und Krise*, Opladen 1973, p. 198.

¹⁴ Karl-Heinrich Hansmeyer, Bert Rürup, “Umweltgefährdung und Gesellschaftssystem” in: *Wirtschaftspolitische Chronik*, 1973, p. 7-27 (11).

The environment in the course of industrialization became increasingly a refuse bucket of private capitalistic accumulation. It meant less and less as the environment of all men, and the social costs of private economic industrial production were more and more diverted into individual profits.¹⁵

While these factors affect predominantly the (mainly, cost-saving) manufacturing process, there is the additional consideration that the capitalist methods of production regularly cause overproduction, squandering of raw materials and energy, as well as enormous amounts of waste.¹⁶

According to these analyses, on which there is basic consensus in modern economic theory and political economy, there can be no doubt that—as far the protection of our natural resources is concerned—the purposes of the economic subject and the society as a whole diverge considerably. However, this is a rather common situation which, in the past, could be remedied by the mobilization of counter forces, especially through strong trade unions. But the rationality of society as a whole, whose goals can be described as relating to the “quality of life”, provision for future generations, and worldwide balancing of interests, is too weakly organized in the industrialized western societies. The political system in capitalist societies has proven itself almost incapable of accomplishing goals of the societies as a whole, where the affected population is unable to create risks to the system (by strike, unrest, or revolution), either because they are themselves physically unable to articulate (children, the aged, the ill, or future generations) or because the disadvantages are difficult to conceptualize.¹⁷ This latter reason has proven to be the situation with regard to damages to the environment, so that so far no powerful interest groups have been founded. The actions are limited to individual initiative, the effects of which are, for the most part, slight and shortterm. Blockades, such as those undertaken by the fishermen in Japan are atypical because normally neither the wrongdoer nor the victim can be precisely identified.

Also, the citizen as consumer can not be expected to pursue the goals of environment protection. Not only is he nearly helpless to protect his own interests, such as the price and quality of goods, because of scientific

¹⁵ Gerhard Kade, “Ökonomische und gesellschaftspolitische Aspekte des Umweltschutzes” in M. Glagow (ed.), *Umweltgefährdung und Gesellschaftssystem*, Munich, 1972, pp. 124-141 (131).

¹⁶ Cf. Volker Ronge, “Umwelt im kapitalistischen System” in M. Glagow, *supra*, pp. 97-123 (109).

¹⁷ Cf. Claus Offe's theory of the disparity of spheres of life, in Gisela Kress/Dieter Senghaas, *Politikwissenschaft*, Frankfurt, 1972, pp. 154 ss.

sales and often manipulative advertising methods, but also he has absolutely no means at his disposal to check or influence the environmental qualities of the goods.

No discussion is required here of those theories which regard the state merely as an administrative committee for the owners of the means of production, or as the "ideal super-capitalist".¹⁸ Unnecessary also is a discussion of those theories which, going less far, demonstrate the many ways in which the economy influences the development of the political will. In the sphere of environmental disruption, this primacy of economics over politics results because the economy is being questioned in a central sphere, in its "organization principle",¹⁹ and, therefore, it exerts all means at its disposal in order to achieve its interests and goals, whereas the political system remains unprepared for the articulation of environmental interests.

3) *Environmental Damages in the Centrally Planned Economy*

According to the economic model of the Eastern European socialist countries, no environmental damage, attributable to the individual zeal for profits and the assumed independence of the economy from politics, should occur in these countries. "Industry working under an ideal central plan for the economy should not create any specific environmental problems."²⁰

The position holding that in socialist systems environmental problems can be solved by socio-political decisions, is frequently advocated. When,—the reasoning goes— either because of societal priorities or the extent of the danger perceived, a decision of this kind is necessary, it can be made and executed forthwith. On the other hand, it is argued, even when the problems and the dangers have been perceived in the capitalist system, there exists no decision-making mechanism with which the problem could be easily solved.²¹

But the parallels between environmental damages in the industrialized nations of the East and West²² compel the conclusion that the broad

¹⁸ Cf. Claus Offe, *Strukturprobleme des kapitalistischen Staates*, 2 ed., Frankfurt, 1973, pp. 65 ss.

¹⁹ Cf. Jürgen Habermas, *Legitimationsprobleme im Spätkapitalismus*, Frankfurt, 1973, pp. 61 ss.

²⁰ Hansmeyer/Rürup, *supra*, p. 13.

²¹ Ronge, *supra*, p. 111.

²² Cf. Marshall J. Goldman, *The Spoils of Progress. Environmental Pollution in the USSR*, Cambridge, Mass., 1972; *Idem*, *Umwelzerstörung und Umweltvergiftung in der Sowjetunion*, in M. Glagow, *supra*, pp. 73-94.

spectrum of decision-making possibilities within the centrally — planned socialist economy must be narrowed down within the actualities of the Eastern European economies. If one does not choose to regard the existing environmental damage as merely an accident, one must conclude that the factors which affect the socialist economic planning do not vary considerably from those in the free enterprise system. And that is, indeed, the starting point for the criticism, as it has been expressed recently even within the socialist movement. Capitalism, as a manner of production, is not rejected by the mere abolition of private ownership of the most important means of production. The more equitable distribution of profits does not eliminate the contradiction between intrinsic value and exchange value, nor does it lead to the abandonment of the accumulation model taken over from the industrial revolution.²³

The socialist society is a society in transition, in the very precise sense of the word: a form of society, in which the capitalist methods of production, blended with new elements, persist and exert decisive pressure on the political sphere, on the bonds between human beings and on the relationship between government and the governed.²⁴

As far as environmental damage is concerned, this exclusion of the broader goals of society from the economic activity is reflected in the composition of business objectives as well as in the planning procedure followed by the central administration.

In socialist market economies, as for example Yugoslavia and Hungary, many enterprises (cooperatives) are largely autonomous, with the result that they adapt “entrepreneurial interests”. Since increasing profits is recognized as the goal of their entrepreneurial activity, the interests of the state and, in cases of pollution, of the entire society often collide here, as in the Western societies, with those of the enterprise.²⁵ But even in the USSR, the enterprises have an individual interest in attaining the highest possible production figures. They are encouraged by premiums for fulfillment or overfulfillment of their imposed quotas and oppose anti-pollution measures which divert capital from the production sector or necessitate an interruption of the production process. Even today, only those quotas which affect the input-output side of production, without regard to social costs, are decisive for the awarding of premiums. Environ-

²³ Cf. Hans Magnus Enzensberger, “Zur Kritik der politischen Ökologie” in *Kursbuch* 33 (1973), pp. 1-42 (25); Rossana Rossanda, “Die sozialistischen Länder: Ein Dilemma der westeuropäischen Linken” in *Kursbuch* 30 (1972), pp. 1-34 (25 ss.).

²⁴ Rossana Rossanda, *supra*, p. 30.

²⁵ Cf. Gyula Bora, “Planwirtschaft als Voraussetzung einer wirksamen Umweltpolitik” in *Umweltpolitik in Europa*, Munich, 1973, pp. 245-255 (246 s.).

mental aspects cannot adequately be deliberated, neither in enterprise decisions concerning the kind and amount of manufactured products nor in the selection of the production processes.²⁶ The theoretical possibility that every state-owned enterprise automatically include in its price calculation the costs which arise to the general public from its activity, has not been made a reality. Since not only air and water, but also the extraction of minerals is gratuitous, certain forms of environmental destruction can occur which are avoidable in a capitalist society.²⁷ Raw materials are rather extensively exploited and when extraction costs increase above the average, new deposits are located. This practice has recently led to the imposition of leasing fees for mines and places of prospecting.²⁸ Even though fines are occasionally levied in order to induce enterprises to abate pollution, purely business-related calculations determine further action: if the fines are lower than the capital necessary for elimination of the source of injury, the dangerous process will usually be retained.²⁹

In the devisal of economic plans, there exists a conflict even in socialist countries between the common good on the one hand and, on the other, the interests of economic functionaries of all echelons who are concerned about maximizing growth and premiums. So far, the latter has kept the upper hand.³⁰ An open discussion of the threat to the environment was not permitted for some time and even today could not be so unrestrained as to allude to causative circumstances which affect the core of the socio-economic system. The organizing of environmental interests is impeded. Certainly the socialist press today seizes more often on single cases of damage—and thus begins to make broader parts of the society aware of the negative effects of the economic progress, so often exalted in the past.

In general, however, a *political* discussion of the goals of growth and of participation in the international competition has hardly begun. The question is more often treated as a purely administrative (technocratic) matter and assigned a low priority within the economic administration, which is illustrated by the fact that in the USSR, for example, the lower echelons of the plan-drafting hierarchy are concerned with the implement-

²⁶ Hans-Hermann Höhmann, Gertraud Seidenstecher, Thomas Vajna, *Umweltschutz und ökonomisches System in Osteuropa*, Stuttgart, 1973, p. 38; cf. Hellmuth Stefan Seidenfus, "Umweltschutz, politisches System und wirtschaftliche Macht" in *Macht und ökonomisches Gesetz, Schriften des Vereins für Socialpolitik*, N. F. vol. 74/II, Berlin, 1973, p. 816.

²⁷ Cf. Goldman, *Umweltzerstörung und Umweltvergiftung in der Sowjetunion*, *supra*, pp. 89 s.

²⁸ *Supra*, p. 88.

²⁹ Höhmann/Seidenstecher/Vajna, *supra*, pp. 39, 56; Bora, *supra*, p. 247.

³⁰ Rossana Rossanda, *supra*, p. 26; Höhmann/Seidenstecher/Vajna, *supra*, pp. 27 ss.

ation of specific environmental protection projects.³¹ In the future, the Hungarian middle—and long—term economic plans shall also take into consideration the issues of environmental protection. But: “. . . naturally, only those methods satisfactory to the Hungarian industry will be introduced.”³²

4) *Sub-System Differentiation of the Economy and Damage Prevention*

If the basic cause for the destruction of the environment lies in the development of the economy as a relatively independent, autonomous sub-system, and in its usurpation of the goal setting functions of society, this must have consequences for the measures to be taken. The following must be considered:

a) whether responsibility for the prevention of further environmental damage should remain with the economy, or

b) whether “external” influences, especially from the political system, should be employed to compel the implementation of preventive measures, or

c) whether the autonomy of the economic system itself should be infringed upon.

ad a): At first glance this way seems paradoxical, especially since the self-development of the economic system has been advanced as the main cause of environmental problems. But the economy itself perceives increasingly the negative consequences of environmental disruption. E.g., it is becoming difficult to find skilled workers in the great industrial areas. This was revealed by poll in the industrial Ruhr district (“Siedlungsverband Ruhrkohlenbezirk”) in 1966, when approximately 30% of the departing workers gave as their motives for leaving better environmental conditions, such as cleaner air and the availability of recreation facilities in the neighbourhood.³³ The provision of usable water, which for many branches of industry must be of drinking water quality, creates problems of pre-conditioning. Dust particles in the air endanger sensitive apparatus and shorten their useful life. Exhaust gas and fumes cause corrosion. Noise reduces the concentration of the workers. At a certain

³¹ Höhmann/Seidenstecher/Vajna, p. 31.

³² Bora, *supra*, p. 249.

³³ Helmut Zschocke, “Ungelöstes Problem der Umweltgestaltung in Westdeutschland” in M. Glagow, *supra*, p. 148.

point, therefore, the environmental crisis becomes directly relevant to production.

If, however, the assertion of the system theory that differentiation and self-regulation increase the number of alternatives and with them the efficiency of the system is correct, then there is good reason to argue that perhaps the prevention of production-related environmental damage should be left to the economic system. This is a tendency which is obviously gaining momentum in Western industrial nations. On Wall Street, environment protection is one of hottest growth industries of the 1970's. Stock quotations of environment protection industries have, since 1969, often risen more than 50%.³⁴

In order to control the shortage in raw materials, the German Chambers of Commerce have founded exchanges for waste material. And the ideological basis has already been developed, too:

farsighted entrepreneurs recognize in environment protection a serious test for the economy. On this point an international manager wrote me: "The better the economy masters the problem, the better will be the image of the free enterprise system in the eyes of the general public, and with it also the often scornful image of the entrepreneur."

The background of this conception:

The social responsibility of the entrepreneur is already broader and deeper than the usual system of corporate benefits; it stands on the border of a general societal responsibility, and has clearly become a task for modern management. The interest in questions of environmental protection, of the infra—and social structures is part of the role—expectations which the public has towards the modern entrepreneurs.³⁵

A series of state measures, such as the writing off of environment protection investments as a positive or "effluent fees" as a negative incentive, must be classified in this first group, which leaves the abatement of environmental dangers to the economy. This is so because these incentives shall only facilitate, not replace the entrepreneurial decision. So it must be taken into account that individual businesses would rather forego the tax allowance or pay the fees than undertake precautionary measures.

Undoubtedly, it involves a high risk to leave to one only subsystem the solution of a problem which is one for the society as a whole. Consider, for example, the largely real case that the energy supply of a country is

³⁴ Cf. Martin Gellen, "Das Entstehen eines ökologisch-industriellen Komplexes" in M. Glagow, *supra*, p. 207.

³⁵ Zürcher Trend, Verlag Transterra GmbH, 12.3.1971, cited by G. Kade, "Ökonomische und gesellschaftspolitische Aspekte des Umweltschutzes" in M. Glagow, *supra*, p. 138.

controlled by international oil concerns. But in view of the threat to the environment, the efficiency of such delegation is a weighty factor. When the economy assumes responsibility for solving the problem, one must, at any rate, examine which goals will be neglected and which dangers might possibly increase.

ad b): The way, in which the political system can compel the economy to take preventive measures is the classical way of liberal states: Everyone is free to act until he damages the public good, which is preserved and maintained by the state. Accordingly, here is the center of gravity of environmental measures. The construction and operation of production facilities is allowed only when the officially imposed standards are observed. Permission is granted when the required technical provisions for the abatement of environmental dangers are fulfilled. Stringent qualitative requirements are imposed on certain products. Fines, prison terms, and suspensions of operation help to accomplish the politically-established goals. But the question remains whether substantially more can be achieved by these measures than what the economy would be willing to do in its own interest. Prior attempts to control the economy, as undertaken by the Federal Cartel Office or by the Federal Banking Supervision Office in Germany, have not proven particularly effective, as recent cases demonstrate. It is, first of all, a pure information problem to collate the many necessary "inside" data relevant for the limitation of environmental dangers. The communication between subsystems of the society is subject to a filtering process—especially when the sharing of information could limit individual options for one subsystem. It is absolutely inconceivable that controlling political authorities would always be promptly appraised of environmental risks involved in new processes of production or new products.

It must also be considered that the economy will oppose political measures which conflict with its interests through its various, well-coordinated instruments. The capital-oriented lobbies or pressure groups in Germany form a tightly-knit organization and communication web. Estimates of the total of their full-time employees, fluctuate between thirty and one hundred and twenty thousand.³⁶ Organizations of enterprises sit on the chambers of commerce, with whose help they, under the pretence of giving expert advice which is within the legal competence of the chambers, represent particularly well the business viewpoints before the authorities.³⁷ The dependence of municipal communities on the in-

³⁶ Norbert Koubek a.o., "Wirtschaftliche Konzentration und gesellschaftliche Machtverteilung in der BRD" in *Aus Politik und Zeitgeschichte*, 28/72, p. 16.

³⁷ Hermann Adam, "Pluralismus oder Herrschaft des Kapitals?" in *Aus Politik und Zeitgeschichte*, 14/74, p. 37.

dustrial tax yield compels mayors to recognize and support local industrial interests above all.³⁸ The most significant arguments in the literature which demonstrate the influence of the economic on the political system,³⁹ are as follows:

- Single blocks of capital or industrial groups have institutionalized lines of influence to the legislature and the administration, which afford them the opportunity to prejudice the decision-making procedure in their favour.
- Possible “investment strikes” or the shifting of production overseas pose a constant, latent “indirect threat”, which the state must always take into account.
- A great part of political opinion—making occurs under the direct control of capitalist—organized mass media.
- Finally, direct and indirect influence can be exerted in the selection of personnel for important government positions.⁴⁰

With these means, the economy has been so successful in evading the already existing environmental provisions⁴¹ that probably little can be expected from the recently intensified state regulation. Complete adherence to the prescribed standards can be expected only in those areas where enterprises perceive an interest of their own in the improvement of the environment. This seems to be the case especially in the sphere of water quality.⁴² The function, usually associated with the political system, of pursuing goals which cannot be satisfactorily achieved within the social subsystems encounters insurmountable obstacles—at least according to present experience. The situation varies only when the additional costs and reduced profits are completely assumed by the government.⁴³ This already touches the topic to be discussed in the following section.

ad c): The most radical restraint of the economic system would appear to be nationalization of private industry in the Western hemisphere and the dismantling of decentralized decision making mechanisms and bonus

³⁸ Thomas Ellwein, “Regierung und Verwaltung”, Part I, *Regierung als politische Führung*, Stuttgart, 1970, p. 30.

³⁹ Cf. John Kenneth Galbraith, Andrew Shonfield, *Geplanter Kapitalismus*, Cologne, 1968; Jörg Huffschmied, *Die Politik des Kapitals*, Frankfurt, 1969; Joachim Hirsch, “Zur politischen Ökonomie des politischen Systems” in Kress/Senghaas (ed.), *Politikwissenschaft*, Frankfurt, 1972.

⁴⁰ Claus Offe, *Strukturprobleme des kapitalistischen Staates*, 2 ed., Frankfurt, 1973, pp. 66 s.

⁴¹ Cf. Eckard Reh binder, Hans-Gerwin Burgbacher, Rolf Knieper, *Bürgerklage im Umweltrecht*, Berlin, 1972, pp. 21 ss.

⁴² Cf. Manfred Glagow, “Zur staatlichen Regulierung von Umweltschäden” in M. Glagow (ed.), *supra*, pp. 193-206.

⁴³ Cf. J. Clarence Davies, *The Politics of Pollution*, Indianapolis, 1970, pp. 92 ss.

systems in the East. Undoubtedly, this would again enable the political system to reinstate neglected goals into the economic activity. Values such as the "quality of life"—whatever its substantive content—or the retention of natural resources for future generations, could receive first priority. It is no valid objection that stateowned enterprises behave just as recklessly as private enterprises in the present economy. In any case, this often-repeated statement would have to be examined. Above all, however, it must be remembered that isolated government oases in a capitalist system are, to a large extent, compelled to conform to the rules of this system. Conversely, if entire industries were put under government control, their decision-making processes would probably be more responsive to political goals. The state-run transport and communication services in the Federal Republic of Germany appear to offer sufficient support for this suggestion. Still, there are few advocates of such radical solutions to the environmental crisis because a fully differentiated economic system seems most effective in fulfilling other goals, such as the supplying of goods. But a closer look at the arguments advanced by the foes of nationalization makes manifest that they are only against a fusion of the economic with the *political* subsystem, probably because the latter has never created optimal structures. Indeed, taking into account all existing experience, it seems probable that the deficiencies of the political system such as the inflation of the bureaucracy, the establishment of a caste of functionaries, corruption, etc., would infect the area of production. But there are developments showing that the economy can be reintegrated into society in other ways.

These are, primarily, the models for co-determination which enhance the participation of employees and their organizations in production planning and management. It can safely be said that this will lead to the inclusion of more goals in business decisions. Exclusive orientation on the goal of profit maximization will no longer be possible. However, the reticence of the unions in questions of environmental protection is significant. It is certainly not by accident that an officer of the German metal workers union, at a conference on the "quality of life", demanded union participation precisely in production reductions and limitations.⁴⁴ Labour often perceives its interest in job security as directly related to the perpetuation of environmentally detrimental production. Consumer interests, for example, are not adequately represented in co-determination models.

Societal goals can also be introduced into business by share ownership.⁴⁵

⁴⁴ Cf. Klaus Schmid, "Diskussionsbeitrag" in *Aufgabe Zukunft—Qualität des Lebens*, vol. 4, Frankfurt, 1973, p. 155.

⁴⁵ Cf. Phillip J. Blumberg, *Corporate Responsibility in a Changing Society*, Boston, 1972; "The Influence of the Board Room: Reflections on Corporate Responsibility" in *10 Columbia Journal of Law and Social Problems* (1973), pp. 15-46.

There are some very remarkable examples of this, especially in the United States of America. Groups of small shareholders, often supported by pressure groups or universities, have forced unwilling corporations to include certain points on the agenda of the General Meeting of Shareholders, which afforded them the opportunity of having their viewpoints published in the proxy statements, thereby reaching a broad cross-section of other shareholders. Often these are political aims: with Dow Chemical it was against napalm production; with Polaroid against business relations with South Africa; with Gulf Oil against oil production in Angola. Today the thrust of such initiatives appears to be in the area of consumerism and environment protection. Here "Campaign GM", an action of General Motors, received substantial attention. There is no definitive holding as yet on the issue whether such shareholder proposals must be included in the proxy statement.⁴⁶ More and more, however, management feels compelled to institute so-called "Committees for Corporate Responsibility" and, in the case of GM, to issue Social Responsibility Reports. Special Environment Departments are no longer unusual. Of course, it is still an open question how far, beyond the publicity effect, these measures influence management decisions.

There are also parallels to be found in planned economies. In several factories the German Democratic Republic, for example, socialist working groups for environmental protection have been founded.⁴⁷

5) Compensation for Environmental Damages—an Open Research Problem

As indicated before, the law reacts in very different ways to the differentiation of the economic subsystem out of society, when prevention of damages is involved. Much remains unclear, especially the question on which of the three described possibilities the measures should concentrate. This would require an exact evaluation of the tools now being used, a task that can only be completed in cooperation between legal and social scientists. But the legislatures have shown flexibility on a broad scale from Penal Law, Administrative Law, Tax Law, to Insurance Law, of which it can be said, without extensive analysis of the consequences, that it has had some degree of success. This does not apply to the law of compensation. Three possible solutions are presently being discussed: Individual legal action, group legal action, and the establishment of compensation funds. Obviously, there are certain parallels to the three de-

⁴⁶ Cf. 57 *Minn. L. Rev.*, 385-395 (1972).

⁴⁷ Cf. Höhmann/Seidenstecher/Vajna, *supra*, p. 119.

scribed solutions: in an individual action instituted by the victim, the environmental conflict is left to the “free play of forces”—the liberal model of competition which is based on the proposition that conflicts resolve themselves most quickly when they are left to themselves. The group action involves strong government influence, for this process hinges on the issue of whether the group-plaintiff has standing to sue. In case of the establishment of a compensation fund, the antagonists lose total control over the dispute—the process of compensation being completely in the hands of the government.

The principle of the compensation fund is to pay the emission fees collected from the polluters into a fund out of which individual claims for environmental damages can be liquidated. This avoids problems of civil action, especially that of identifying the polluter—an often difficult, sometimes impossible task. Although this model has been repeatedly proposed, it has not yet been adopted in any legal system.⁴⁸ Where emission fees are levied, as for example in the German Democratic Republic,⁴⁹ they are used for protective facilities or flow directly into the treasury. There is absolutely no social-scientific research on this point. A comparison of the barriers to access to compensation funds on the one hand, and to civil courts on the other is required. Although there are several instances of failure to take advantage of available government benefits (for example the heating costs subsidy granted in the Federal Republic during the oil crisis), access to the fund should be substantially easier than that to the civil court.

Group actions for the enforcement of state anti-pollution measures are permitted in foreign legal systems such as the United States of America, France, and Switzerland.⁵⁰ Only in the United States of America, however, have effective instruments, such as class actions to vindicate group claims for compensation, been developed. There is also no sociological analysis as to what social situations can possibly lead to such group activities. A few spectacular actions in the United States of America and the success of the American consumer advocate, *Ralph Nader*, cannot disguise the fact that normally the injured persons belong to the “silently suffering” groups who take little or no initiative in improving external

⁴⁸ In Holland a compensation fund for victims of air pollution, who cannot be otherwise adequately compensated has been established; *cf.*, art. 64 of the Dutch Air Pollution Act.

⁴⁹ *Cf.* Höhmann/Seidenstecher/Vajna, *supra*, pp. 122 ss.

⁵⁰ *Cf.* Eckard Reh binder, Hans-Gerwin Burgbacher, Rolf Knieper, *Bürgerklage im Umweltrecht*, Berlin, 1972.

living conditions.⁵¹ The main victims, the educationally and financially underprivileged residents of industrial districts, are not acquainted with different living conditions anyway, and, as an American poll shows (Table 2), fail to perceive the seriousness of the problem.

Education	<i>Air Pollution</i>	<i>Water Pollution</i>
	% "very serious"	% "very serious"
	% (n)	% (n)
Less than high school completed	23 (475)	21 (475)
High school completed	27 (363)	23 (363)
Some college	35 (199)	32 (199)
Income		
Under \$ 5,000	21 (312)	17 (312)
\$ 5,000 - \$ 6,999	24 (237)	19 (237)
\$ 7,000 - \$ 9,999	31 (234)	29 (234)
\$ 10,000 or over	33 (246)	32 (246)

Table 2: Perceived Seriousness of Air and Water Pollution Related to Education and Income (Source: Opinion Research Corporation, *Public Opinion Index* [Princeton, N. J., 1968], cited by *Davies, supra*, p. 26).

For want of other more effective means, compensation claims can only be vindicated in the civil court — an institution which is, in no way, prepared for such litigation. In all legal systems there is a lack of legal and financial assistance for lower-income persons who regularly suffer most from environmental pollution. Their access to the courts has always been limited but they are at a total disadvantage when the adversary is an industrial enterprise. In environmental litigation there are special evidential difficulties. The costs of litigation are higher than average, since the procedure usually runs through several instances and requires expert testimony. When negligence has to be proven, the injured usually has no access to all the necessary facts, because typically the polluter is not a single person but a complex organization. Of special importance also, is the attitude of the judges to environmental pollution, for in actions of this kind they have particularly broad discretion. Today, the prevailing attitude still appears to be that every industrial victim is, at the same time, a beneficiary of industrial progress, in the interest of

⁵¹ Cf. M. Olsong, *Die Logik des kollektiven Handelns, Kollektivgüter und die Theorie der Gruppen*, Tutzing, 1968; cf. with regard to the citizen initiatives in the context of the society as a whole, also Claus Offe, *Strukturprobleme des kapitalistischen Staates*, Frankfurt, 1973, pp. 123 ss. and 153 ss.

which the law can accede to certain encroachments on him.⁵² There might be a change of position when empirical data on special damage concentrations and unequal adverse effects on different population groups are made available.

For the legal and legislative work to be done in this field, one basic requirement of all juridical thinking is yet missing: the knowledge of the typical forms of the social phenomenon to be regulated. There is no such thing as *the* environmental damage, rather a number of very different damage situations. Injuries from explosions have little in common with the killing of fish in the Rhine; smog damages little with the loss of recreation facilities due to urbanization. The next step to be taken is the determination of appropriate indicators which can serve to structure and comprehend reality as specifically as possible. Another step would be to delineate those claims which are judicially cognizable and modify the substantive and procedural law accordingly. But for most environmental damages, other forms of compensation will have to be found.⁵³

⁵² Cf. Höhmann/Seidenstecher/Vajna, pp. 107 s.

⁵³ A research group at the Max-Planck-Institut für ausländisches und internationales Privatrecht, Hamburg, has assumed work on such a project.