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Article — Digitized Version

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Intereconomics

Suggested Citation: Harman, Willis W.; Lewis, L. Floyd (1976) : Growth, decline, or metamorphosis?, Intereconomics, ISSN 0020-5346, Verlag Weltarchiv, Hamburg, Vol. 11, Iss. 6, pp. 156-161, <https://doi.org/10.1007/BF02928958>

This Version is available at:

<https://hdl.handle.net/10419/139377>

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ARTICLES

USA

Growth, Decline, or Metamorphosis?

by Willis W. Harman *, L. Floyd Lewis **

The first day of the Second International Symposium on New Problems of Advanced Societies held from May 3 to 7, 1976, in Hamburg, was devoted to "Basic Political and Social Problems of the 1980's". In the following article those problems are traced back to a number of fundamental failures. Their removal requires, in the authors' view, a thoroughgoing societal transformation. Subsequently we publish a contribution by Professor Bernard Cazes that also represents an excerpt from his report at the Symposium.

It is possible to view the major societal problems of the 1980s as consisting of five fundamental failures, that include as subcategories most other problems. These fundamental failures include: 1) The failure to develop and maintain the habitability of the planet; 2) The failure to provide each individual with an opportunity to contribute to the society and to be affirmed by it in return; 3) The failure to foster socially responsible management of the development and application of technology; 4) The failure to foster a more equitable distribution of power and wealth; and finally, 5) The failure to provide goals that will enlist the deepest loyalties and commitments of the nations' citizens. It can be maintained that the five fundamental failures are themselves symptoms of a deeper disorder, that of the basic inadequacy of the industrial-era paradigm as the organizing framework for our future.

On the Habitability of Our Planet

The failure to maintain and develop the habitability of our planet can be conceptualized as simultaneously approaching the planetary limits of:

- Fossil fuels and other "capital" energy sources;
- Mineral and nonmineral resources;
- Fresh water;
- Arable land and habitable space;
- Waste-absorbing capacity of the natural environment;
- Resilience of the planet's life-supporting ecosystems.

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The post-World War II era was one of unparalleled growth throughout the industrialized world. The characteristics of this growth are important to note. Surprisingly, the quantity of basic goods produced per capita did not increase appreciably during this period. What did change were the kinds of goods produced and the nature of productive technologies.

The technological transformation of the American farm is one of the developments that had the greatest social and environmental impact. Before it was transformed by modern technology, a farm was simply a place where certain biological activities were localized. Crops took nutrients from the soil; the nutrients came from organic matter; the soil's organic store was maintained by the return of plant debris and animal wastes to the soil and by the natural fixation of nitrogen from the air into a useful organic form. The ecological cycles tended to be in balance, and with care the natural fertility of the soil could be maintained indefinitely. In contrast, modern agribusiness is so intensive that it depletes the natural supply of organic nutrients; as a result, inorganic fertilizers are applied in increasing amounts, and their runoff from the fields pollutes water supplies. Wastes from cattle confined to feedlots accumulate and result in more water pollution; wide use of pesticides and genetically controlled plant varieties drastically alter the natural ecology. Finally, when the whole food production cycle is considered — from soil preparation, planting, cultivating, and harvesting, through transportation, processing, packaging, distribution, and final preparation — far more fossil fuel energy than solar energy from photosynthesis goes into the food on our table.

Thus, the trend toward further industrialization of agriculture may be less rational than has been assumed.

Another characteristic of postwar technology has been the progressive substitution of relatively non-biodegradable synthetics for natural materials, and energy-costly materials and operations for less energy-intensive ones. Examples of the former are the substitution of nylon and polyester fibers for cotton, wool, and silk, and of detergents for soap. An example of the latter is the replacement of lumber and steel by aluminium for building and packaging materials.

Another distinguishing characteristic of the post-World War II growth period is the steady per capita increase in energy consumption. The substitution of other forms of energy for human toil and their use in providing new goods and services have been hallmarks of the entire industrial period. But, in recent decades the rapid acceleration of energy consumption has assumed special importance. Despite brave talk about promising new energy sources, the long-term solution to the US energy supply problem is very uncertain, particularly in the area of liquid fuels. In the shorter term the battles over the energy-environment tradeoff will be bitter ones and will lead to serious delays in projected energy supply projects.

The numerous and intense interactions and interdependencies of these areas force us to consider them collectively, rather than in isolation. The problem is not that a critical shortage in any particular category is imminent; even if it were, substitutability provides a way out. The difficulty is that, because *all* of these interdependent factors are approaching planetary limits together, the solutions that resolved scarcity problems in the past — geographic expansion and technological development — do not promise the same sort of relief in the future.

Missing Opportunities for the Individual

The second of the five fundamental failures involves our inability to provide each individual with an opportunity to contribute to the society and to be affirmed by it in return. This failure involves much more than an inability to achieve reasonably full employment. The basic problem is that the structure of society has the effect of defining an ever-increasing number of people as "unneeded". They are, in fact, not needed for production, and with the industrial mind-set this becomes equated with being extraneous and useless. The lurking shortage of work roles has provoked anxiety for the past half century, though this problem has been diminished by the economic stimulus of wars and preparations for war.

In his book "Cybernation: The Silent Conquest" (1962) Donald Michael forecast that the shortage of work roles would be a key problem in the future. For a few years it seemed that his warning might have been a cry of wolf and that new technology would generate more jobs than it displaced. But the new constraints of environmental degradation and resource scarcities changed that. Production cannot increase indefinitely; superfluous persons cannot be provided jobs through ever-expanding production. Ironically, although technology can potentially relieve man of burdensome and routine labor, it has in fact deprived many men and women of the privilege of performing wholesome, mind-forming, self-rewarding, appreciated work.

Fear of advancing technology eliminating jobs is far from a new development. Basically the thrust of industrial and technological development over the past two centuries has been to substitute energy driven equipment for human labor, thus eliminating jobs. But new products and services were continually being generated, thereby creating new jobs as old ones disappeared. In recent decades massive advertising promoting consumption and waste has been needed to create sufficient demand for these new products and services. Now, however, we are encountering environmental and resource limitations that push us in the opposite direction toward conservation and frugality. Out of this clash of opposing forces arise increasingly intolerable tradeoffs. Although it has been possible to conceal the tendency toward increased unemployment for some time, the problem of "superfluous people" grows more serious as the society becomes more highly industrialized.

In a modern society where productiveness comes from one's position in a productive organism, the individual without the organization is unproductive and ineffective; unemployment and underemployment endanger effective citizenship and self-respect. Welfare or income maintenance, or being kept as a pet in any other guise, cannot solve the problem because it does not deal with the psychological consequences of unemployment.

The situation is not much better for the underemployed, whose best work opportunities represent a sorry use of their capabilities. Underemployment is partly related to education; in fact, the claim has been made that it is the same as overeducation. Having educated its citizens to fuller awareness of their potentialities, a society is in trouble if it does not provide for the exercise of those capabilities.

A look to the future is not reassuring. The work force of tomorrow will be better educated and will be making more demands for interesting and

meaningful jobs that satisfy their requirements for challenge, growth, and self-fulfilment; many will become disaffected because too few fulfilling jobs will be available. These problems seem to be deeply rooted in the structure of technologically advanced societies. Although the more pressing problems of inflation and unemployment may push the issue of worker dissatisfaction off the front page, this problem seems destined to be a major concern of developed societies for the indefinite future.

In order to remain competitive on world markets and to create these new jobs, government and business are under pressure to keep productivity increasing. This involves more energy use (causing further environmental damage, and resource depletion) and increasing automation. Thus the conflict with the habitability considerations is apparent – it takes ever faster expansion of an automated economy to create the same number of jobs. Clearly, this path leads not to a resolution of the dilemma, but a further intensification of problems.

On Management of Technology

The next fundamental failure involves our inability to achieve socially responsible management of the development and application of technology. Only a few years ago technological advancement seemed almost synonymous with "civilization". The history of science and technology was viewed as a continuum, with periods of acceleration and periods of stasis and now and then a great leap forward. In general, technological change has been widely accepted as an essential element of economic development. Economic growth depends upon gains in productivity that seemingly can be achieved only with the infusion of new knowledge and technology.

Then, somewhat suddenly, in the last third of this century, the public became disenchanted with uncurbed technology; people demanded technological restraint and social responsibility. Whereas technological advance had formerly been considered an irresistible force, bringing with it unquestioned advantages and social progress, now a new alternative appeared possible – the rejection of some technologies because of their undesirable social impact. Many problems are now seen as the direct result of the unspoken "technological imperative," that whenever technology could make a profit for an individual or a corporation, or could contribute to a nation's ability to carry on warfare, it would be developed and applied. The result is that negative effects of technology – the polluted rivers, endangered species, hazards to public safety, undesirable social impacts, proliferating arms races – build up to

intolerable levels, before there is a serious attempt at corrective action.

Using science and technology, advanced societies now have, or soon will have the power:

- To change to an unlimited degree the characteristics of our physical environment and the plant and animal population of the biosphere.
- To modify without limit the physical characteristics of individual human bodies and the evolutionary development of the human race by means of biological and genetic engineering.
- To alter drastically mankind's social and psychological environment, including people's mental and emotional characteristics.
- To annihilate large segments of the human race and devastate large areas of the earth with weapons of mass destruction.
- To change significantly, in many other ways, the kind of world that is handed to the next generation.

These powers are so awesome and vast that they clearly must be directed, channelled, and controlled. The premise, long built into the technological-industrial thrust, that any technology that can be developed and applied should be – the "technological imperative" – turns out to be pathogenic in the end.

Current attempts to solve this problem by applying technology assessment run into at least two difficulties. First, even if a competent assessment is accomplished, it is often distrusted by the public. Second, a more fundamental dilemma regarding technological control arises because it is not clear whether more control can be exerted over new technology (e.g., who may develop and apply what technologies, with what future impacts on society) without seriously endangering fundamental features of private enterprise and our democratic society.

Power and Wealth Distribution Problems

There is a fourth fundamental failure of significance for the 1980s: As an advanced industrial nation, we are failing to foster a more equitable distribution of power and wealth, both within and between states. A fundamental power instability is intrinsic to any conceivable society; those who possess knowledge or physical, political, or economic power in any society are in the best position to gain more, while those who lack knowledge or power are less likely to acquire it. In the vernacular, "Them as has, gets." Because this power instability can ultimately destroy the social fabric, every stable society has had to devise some way of counteracting it, including some form of legiti-

mized coercion. In every case some limiting mechanism ultimately counteracts the tendency of power to accumulate indefinitely.

In modern industrial democracy the tendency for power to accumulate is held in check by traditions of equality of opportunity and of socioeconomic mobility, reinforced by a variety of regulating measures. But these mechanisms have proven inadequate to bring about a more equitable distribution. This failure is partly due to the growth of giant corporations with such enormous economic power that they are relatively immune to normal processes of community control.

Even more seriously, the advanced industrial nations have not devised mechanisms for more equitable distribution of the earth's resources between the industrialized nations and the Third World countries. The seeds of worldwide conflict lie in the enormous and growing disparity between the world's rich and poor peoples.

Disappointed Loyalties

The final fundamental failure is the failure to provide goals that will enlist the deepest loyalties and commitments of the nations' citizens. We see the results in the alienation of youth, women, and minorities, the growing lack of trust in basic institutions, and the increase in drug use, mental illnesses, crime, and suicide.

Every society has some dominant theme, some set of objectives that the citizenry understands and supports and that gives purpose to their social participations — some "central project" to use US sociologist Amatai Etzioni's term. The central project that dominated the industrial era was material progress, especially technological progress. For scores of years America's view of the future was thoroughly positive; we anticipated continued and inevitable material progress.

But this image of the future didn't survive the journey. Material progress, the central goal of industrial society, has been transmuted into pollution, energy shortage, and problems of uncontrolled growth. Affluence and leisure have been gained, but with them have come persistent unemployment and worker discontent. The promise of technological miracles has come to look more like the problem of technology control. The rising standard of living somehow turned into the spectacle of the well-fed few and the starving many.

The Industrial-era Paradigm Challenged

You have all long been aware of the kinds of problems just discussed. You are also aware that direct measures for dealing with these problems have, on the whole, been unsuccessful and have

often led to unanticipated and undesired consequences. The reasons for these failures may be intrinsic. These problems appear to be symptoms of underlying conditions that are more fundamental and more difficult to delineate. When the treatment has concentrated on removing one symptom, it has often exacerbated another. It is, accordingly, no accident that planned social measures have produced results which were just the opposite of those intended by their well-meaning sponsors.

All of these observations suggest that there is a second level at which the ills of society may be viewed. Accordingly, some analysts have argued that the 1960s-type liberal programs for problem eradication are intrinsically flawed — that the miseries of the poor, the injustices experienced by minorities, the violences committed by the socially disaffected, the squandering of natural resources, the ravaging of the environment can be alleviated only through basic structural reform in society itself. They maintain that society's problems lie at the level of basic institutions, built-in distribution of economic and political power, and social roles that people have been taught to assume. They argue that viable solutions must operate on these fundamental levels.

Another group of analysts sees the ultimate resolution of the problem in a still more fundamental transformation of society. They have argued that there is a third level at which to view society's problems, underlying and more basic than the level of institutions and social roles. This third level involves the most basic assumptions, attitudes, and values held by individuals and institutionalized in the culture. When this part of the social structure no longer accords with reality — leading the society toward conditions that are intolerable by its own standards — a fundamental crisis looms. In such a case, difficult and thoroughgoing transmutation seems to be the only way in which the complex, interwoven maze of societal problems could achieve satisfactory resolution.

In further exploring the meaning of a fundamental societal transformation it will be useful to introduce the term "dominant paradigm". Originally simply synonymous with pattern or model, paradigm has come to have a more specific meaning since its use by T.S. Kuhn in his seminal study "The Structure of Scientific Revolutions" (1962). Thus, we shall use the term dominant paradigm to refer to the basic way of perceiving, thinking, valuing and doing, associated with a particular vision of reality.

In retrospect we can see that our present Western, industrial-era paradigm began its climb to domi-

nance several centuries ago. It has since had a major impact upon all aspects of Western society and Japan, and has had a significant influence on the rest of the world. This paradigm differs sharply from the dominant paradigm of the Middle Ages in Europe. Among the characteristic features of the industrial-era paradigm are the following premises:

that persons are primarily motivated by the desire for acquisition of material goods, and that there is fulfillment in affluence. This premise assumes that societies should strive for a continually rising material standard of living. As a result of this premise, a person's individual identity and success in life is measured by material possessions and/or occupational status achieved;

that, in seeking to increase their material wealth, persons are justified in viewing both Nature and their fellow citizens as sources of profit. Thus, Nature is seen as something separate from Man, to be manipulated and exploited for his purposes. Members of society individually compete with each other for material gain, and this process is believed to lead to the collective good;

that the highest form of knowledge is based on empiricism and rationality, as exemplified by the scientific method. Science is seen as wedded to technology such that the scientific search for knowledge is predominantly utilitarian, with prediction and control as its guiding values, and technological progress at its goal. This leads to the "technological imperative", that any technology which is possible, is *ipso facto*, necessary and desirable;

that the best way to meet the goals of society is through the process of industrialization of the production of goods and services. This involves organizing and subdividing work into increasingly elemental (and less intrinsically significant) increments, and replacing human labor with machines. Industrialization leads toward goals of labor productivity and a higher material standard of living.

New Paradigm for Old?

Let us take a moment to briefly summarize what has been said this far. It would seem that:

the basic paradigm that has dominated the industrial era (including emphasis on individualism, free enterprise, and material progress; with social responsibility primarily the concern of the government; and with few restraints on capital accumulation, etc.),

and that involves striving toward such goals as efficiency, productivity, continued growth of production and consumption, continued growth of technological and manipulative power,

has resulted in processes and states (e.g. extreme division of labor and specialization, cybernation, stimulated consumption, planned obsolescence and waste, exploitation of common resources, alienation of persons from community and nature, etc.),

which end up counteracting human ends (e.g., enriching work roles, resource conservation, environmental enhancement, equitable sharing of the earth's resources).

The result is a cultural crisis of major proportions – a growing and massive challenge to the legitimacy of the present industrial system.

If the problems we have discussed in this paper are a result of basic incongruities between the elements of the industrial-era paradigm, and the present social and environmental context, then a solution for those problems likely involves a transition to some new paradigm capable of resolving the incongruities.

Though a transformation of the industrial-era paradigm is problematic, and the exact form of the new paradigm still more uncertain, it may be useful to attempt to postulate the nature of a replacement "transindustrial" paradigm that could help resolve some of our painful dilemmas. The following components could be part of such a paradigm:

That there needs to be a balance and coordination of satisfactions along many dimensions, rather than a maximizing of benefits along one narrowly defined dimension. This idea stems from ecology and general systems theory (as well as from various cultures' concepts of wisdom), and provides a needed corrective to the inadequate goal of material affluence that has accompanied the growth of economics and science in our industrial society. An ethic of self-realization would emphasize the growth and development of the individual in all aspects of his/her life, not just the economic side. It is implied that the appropriate function of social institutions is to create environments that will foster this growth and development. Self-realization will be a necessary theme in the restructuring of social institutions to satisfy individuals' fundamental desire for self-determination and their need for full and valued participation in society.

If man identifies with the whole of nature, if he perceives that he is one with the vast community represented by the planet and all its life forms and with the vast evolutionary processes in time, he is naturally drawn to an ecological ethic, which relates his own selfinterest to that of fellow man and future generations and to all life on the planet.

Such an ecological ethic recognizes limitations on available resources, including space, and realizes that man is an integral part of the natural world, inseparable from it and the laws which govern it. It calls for man to act in partnership with nature in protecting the complex life-supporting systems of the planet, in husbanding resources appropriately, in modifying ecological relationships wisely, in reestablishing satisfactory recycling mechanisms in harmony with natural ones, and in moving toward a new equilibrium economic-ecological system wherein the distinction is more clear which kinds of growth are wholesome and which are cancerous. Though it recognizes the need for some healthy competition in all societies, this ethic reestablishes the importance of co-operation as the prime organizing principle of viable cultures.

□ A transformation of the industrial-era paradigm implies a new view of human knowledge. Knowledge will be seen as inclusive rather than exclusive; science will no longer look at much of the wide range of human experience and say, "We will leave that to religion and the humanities." Science will be eclectic in methodology and in its definition of what constitutes knowledge. The controlled experiment will not be viewed as the only way to revealed truth. The new knowledge paradigm will be hospitable to some sort of systematization of subjective experience, the domain which has heretofore largely been left to non-science — the humanities and religion. Science will foster open, participative inquiry, in the sense of reducing the dichotomy between observer and observed, investigator and subject. Science will be a moral inquiry, in the sense of investigating what values are wholesome for man (much in the sense that the science of nutrition investigates what goods are wholesome for man), rather than a "value free" inquiry. Science will highlight a principle of complementarity, or reconciliation of such "opposites" as free will and determinism,

materialism and transcendentalism, science and religion. The new knowledge paradigm will incorporate some kind of concept of levels of consciousness, or levels of subjective experience, such that concepts and metaphors appropriate to one level do not necessarily fit another. Thus, the paradigm will allow a much more unified view of human experiences now categorized under such diverse headings as "creativity," "intuition," "mysticism," "psychic phenomena," "religious experience."

□ The new goals indicated above are best met by a "learning and planning society" whose central project would be (1) promoting individual growth in awareness, creativeness, adaptability, curiosity, wonder, and love; (2) evolving social institutions to more effectively foster such individual growth; and (3) participating as a partner with nature in the further evolution of the human species on earth. Implicit in the learning and planning society is the replacement of the Protestant compulsive work ethic with a creative work ethic — what we could call a work-learn-play ethic.

The prospect of living through a thoroughgoing societal transformation is sobering. History gives us scant cause for anticipating that we could escape without economic decline, political and social disruptions, and more extensive human suffering than most parts of the United States have ever experienced. A period of chaos seems inevitable as the powerful momentum of the industrial era is turned in a new direction and the various members and institutions of the society respond at different speeds.

Accurate interpretation of this disorder is crucial. The form — and success — of society's policies and actions will depend a great deal on whether the disruptions are seen as necessary steps in the change toward a more workable system or are perceived as capricious and essentially destructive.

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ZUM VERHÄLTNISS VON AUSSENWIRTSCHAFTS- UND ENTWICKLUNGSPOLITIK

(On the Interrelation between External Trade and Development Policies)

Large octavo, 409 pages, 1975, price paperbound DM 46.—

ISBN 3-87895-130-2

V E R L A G W E L T A R C H I V G M B H - H A M B U R G