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PLANNING AND MANAGING OUR ENVIRONMENT

Sanford S. Farness
Professor of Urban Planning
Michigan State University

The environmental management problems confronting modern man are unprecedented, and we necessarily place much hope in man's capacity to develop and adopt intelligent and workable land management policies.

Environmental planning and conservation pose the general question of how modern settlement patterns can best achieve beauty and a maximum of symbolic meaning with a minimum deterioration of the organic systems in nature and in man. We have never really posed this question to ourselves. The whole history of American city building and agricultural development has been based upon the idea of growth as indefinitely extended without significant relationship to environment. We are learning to our sorrow as we currently inventory our staggering accumulation of environmental degradation that such development policies represent ecological, social, aesthetic, and economic illiteracy.

Our universities as centers of learning and cultural criticism must play a role in structuring this problem and transmitting knowledge of man and nature to achieve new levels of environmental policy making. This need will not be met through our customary narrow economic thinking about allocating resources or through computer logic or administrative efficiency. We need to theorize about a higher logic—a higher, multivalued rationalism that can integrate truth, beauty, and goodness into concrete environmental forms.

Ultimately the resolution of our environmental policy needs and problems will depend upon new ecological understanding and integration of art, science, and religion. This challenge will require a greatly expanded awareness of the infinite depths of man's inner self as well as an extended grasp of his multidimensional external environment. Altogether this will result in a transformation of our present mode of consciousness including the very restricted cultural systems sustained by us today.

Our present mode of consciousness, contrasted with prior epochs, is expanded in detail but narrowed in scope. Historically human culture arose out of a triadic ecological system which included man,

nature, and cosmos. Our cultural focus is now centered mainly on political, economic, and scientific values with scientific awareness restricted largely to natural science in the quantitative mode. The triadic ecosystem has been narrowed to awareness of only man-nature components. The creative, formative cosmic powers have been neglected.

CULTURAL TRENDS THAT HAVE DISTORTED OUR UNDERSTANDING OF MAN, NATURE, AND COSMOS

Obscure and subtle decision-making processes in human history shape the direction of man's knowledge. Man is not only responsible for the form of his outer environment but, in a real sense, he determines the content and forms of his concepts and knowledge—his inner environment of meaning and value. Beginning with the fundamental changes in man's consciousness in the sixteenth century, we in Western culture have gradually permitted quantification and abstraction to dominate our perceptions and thought habits, an impetus given primarily by man's desire to dominate and control the environment. These processes have resulted in a distorted perception of nature and alienation between man and his world.

Where do we stand today—what are some main conceptual limitations which, if overcome, can open transforming possibilities? Our age and its problems properly began with the Renaissance. Man's individual awareness of himself—of his ego—then took place on a broad front for the first time. This was part of a new capacity for perception and thought. Directed outward, it produced scientific behavior and knowledge. Political democracy, awareness of freedom, Western scientific knowledge, our present view of nature, and technology, with all of their positive and negative qualities, are gifts of the last four hundred years—gifts which suddenly are now diffusing over and transforming the entire non-Western world.

Man's present sense of himself and nature is, therefore, really quite recent. Western culture has in fact just passed its graceful childhood period—a childhood which began in ancient, pre-Christian times and now has reached a dubious adolescence. Our present landscapes and settlement patterns are expressions of all the conflict, strength, and awkwardness of cultural adolescence. Much of the unconscious beauty and harmony of cultural childhood has flowered in the settlement patterns of historical times. We turn with longing to historical examples of early cities and countrysides still present in Europe and Asia, like ghosts of our forgotten past and uncorrupted expressions of children.

At home we confront in despair our adolescent vitality running away with us in a violent urge to produce and consume. We confront our lack of balance and sudden giantism in metropolitan growth, our embarrassing urban and rural slums, our polluted rivers, and our eroded and scarred landscapes. We confront in dismayed surprise our ignorance and disregard of fundamental aesthetic and ecological concepts which earlier peoples often intuitively expressed in their settlement patterns. Our inner psychological and outer social conflicts are growing, however, and the works of our hands, our cities and landscapes, are beginning to disenchant us.

If our countrysides and cities are ugly, it is because we lack personal will to achieve beauty. If our community structure has dissolved into alienation, it is because we have lost our personal capacity for community life. If our central business districts look like slick, giant supermarkets and our farms and rural landscapes look like vast factories for resource conversion, it is because we have no higher aim than exchanging commodities. If we are to develop a healthy equilibrium between man and nature in our metropolitan regions, watersheds, and localities, we need fresh and deeper perceptions and values concerning both man and nature. Otherwise, in our present mood, we will completely ravage nature and turn ourselves into automata. History shows that in a very brief span of years only a handful of people can exhaust and deplete vast amounts of water, forests, soil, and wildlife.

We have noted that we in Western culture have gradually permitted quantification and abstraction to dominate our perceptions and thought forms. Prior to this change there existed an intimate, concrete, and vivid contact between man and nature. In a sense, man and nature were one. Now this unity between man and nature is largely lost. In our subsequent one-sided emphasis upon producing and consuming in our utilitarian culture, we have acceded to viewing nature and ourselves almost entirely in terms of exchange value—as economic commodities. So we commonly speak in our environmental studies today of “natural resources” and “human resources.” Commodities, however, can only be manipulated and organized as means toward monetary ends—as pure “resources.”

The term, natural resources, is a narrow, utilitarian concept, and its widespread adoption indicates that this is the way we now prefer to view nature—as a set of commodities completely subverted to the price system and human consumption. But to view the earth as primarily a set of resources for conversion into our happiness is surely a dream of our adolescent years—now, perhaps, turning into a bad

dream and possibly into a future nightmare. Yet we persist in speaking about ourselves as human resources as if man could be other than his own end.

How can we awaken from this economic dream to more realistic concepts of man and nature? Surely not by simply extending quantitative methods and natural science. In the near future, we can look forward to putting whole sets of regional surveys and resource inventories into exquisitely complex computers and running elaborate tests of alternative resource development schemes. This will bring us no further toward enhanced development of our environment if our present concepts and policies are still at work. Measurement, logic, and calculation are, of course, necessary and are a great human achievement. What is now necessary is to go beyond them to produce a rational, humane setting for the nurture of enhanced meanings in human life.

OUR DESTRUCTIVE POLICIES OF TECHNO-ECONOMIC DETERMINISM

We have recognized that our environment and its characteristics are largely the result of our intentions in acting—our “expressed” purposes. We “constitute” our culture and our experienced world through choosing our main interests and formulating our ways of thinking in accordance with them. Our interests and our thoughts shape and select the characteristics of the things we confront and apprehend.

Cultural history tells us that noneconomic modes of thinking and intending preceded the economic manner which has become dominant within the last two hundred years. The main disciplines of knowledge and the practice professions also correspond to our intentional modes of acting, and have in fact grown out of them as reflective, theoretical sciences and imaginative, creative arts. Each action mode has a distinctive meaning and logic that shapes decision making in that field and constitutes its rationality. Let us briefly consider some of the differences between these modes of action and their relation to our environment and its design.

Some of the main categories of thinking and decision making, in addition to the economic, are interpersonal relations, technics, health, art, government, and science. As these cultural modes have evolved in Western culture, they have become distinctive with differentiated reasoning, goals, and action. Interpersonal action aims at integrative goals of mutual love, respect, sharing, understanding, and solidarity. It also extends the same reasoning to the world of nature to animals,

trees, water, land, and birds. Technical reason is constituted through man's idealization of productive efficiency. The rationality of health is distinctively based upon the idea of organic and ecological fitness. In the human dimension, health also involves the need for emotional and mental wholeness and balance—the ability to participate in the varied types of action we are now considering. Artistic reason aims at achieving symbolic meaning, beauty, expressive form, and knowledge beyond the logic of discursive reasoning. In our society, governmental rationality is defined by the ends of justice, social control, freedom, protection, and an office for public decision making. Lastly, scientific action is directed by the goal of verifiable knowledge of nature and man.

It is readily apparent that a society in which the above policies and action modes exist in some proportion will produce one kind of environment, while another society with a different balance will produce a markedly different environmental form. Our society is now excessively dominated by economic reasoning, and this imbalance is becoming progressively destructive. This is the immediate cause of many environmental problems. How and when did economic rationality appear in history as a distinct cultural subsystem, and what is its relationship to other modes?

In the Western world, the person first emerged as an actor and planner on a broad social scale around the time of the Renaissance. Formal, secular law, transformed out of divine rule and kingship, was then gradually and painfully created to meet the demands of the new person emerging in society. Through legal definition of personal rights and duties, a free sphere for economic planning and action was created. The economic system is thus a relatively late cultural achievement, dependent upon the prior existence of the natural environment, the religious, legal, scientific, technical, and other cultural subsystems.

The social system for economic action is literally created by the letter of the law in structuring property rights, the market, the monetary system, contract procedures, and specification of the human and natural elements available for economic calculation. Things not so defined are not economic resources but are apprehended under other categories. It is important to note that the material production and consumption of goods does not constitute an economic system as such. The essence of modern economic-social relations is the free calculation, allocation, and exchange of nonmaterial, subjectively held values. The flow and exchange of goods are the result of these inward, intersubjective transactions.

The specific economic sphere is originally constituted when we individually transform persons, artifacts, things of nature, and even ourselves into commodities or resources and, through economic calculation, apportion these resources as means among our multiple “wants.” Prior to this conversion, objects such as persons, houses, land, trees, animals, and cities had other meanings and qualities. But now they are invested with existential, aesthetic, technical, and other meanings that we have previously reviewed. Within the sphere of economic reasoning, these meanings must be repressed. Through shifting our inward “intention,” we thus transform the objects of economic calculation into neutral, interchangeable resources as instrumental means for satisfying our wants. In this way, the economic perspective changes the environment into a neutral, colorless spectrum where everything is exchangeable. Many people now understand only this type of thinking and feel that there are no other ways of making rational decisions.

What has all this to do with the design and management of our environment? The major modes of reasoning and planning which we have discussed are different forms of knowledge making up our cultural system. They exhibit in many ways the creative conflict and harmony of opposites—the dialectical tension of complementaries. The science and art of planning, as well as the science and art of management, is to combine modes of action in a balanced program. When any particular mode of action is pushed to extremes, it excludes the others. A one-sided economic perspective is particularly devastating. It produces what I like to call gray thinking, gray cities, and gray policy making because it neutralizes the world into commodities—into natural resources and human resources as we now call them. Planning is everywhere being “reduced” and narrowed to economic development or resources development.

We should also note that the “coverage” of economic systems is not determined by any natural factors. The economic transformation of the environment is subjectively determined by the meaning man gives his action. The economic sphere, therefore, is free cultural creation of man, subject to potential extension across all sectors of human activity and all components of the environment. Such extension would ultimately result in the exclusion of other policy values as such—the obliteration of intrinsic meanings and noneconomic ends. Our environment then would become a vast array of commodities. The world would become a supermarket. All things, persons, and values could be computed and exchanged in dollar terms.

Our relentless pursuit of techno-economic efficiency has led to

the animated wonders of automated machine production. Our collective fate and destiny and the form of our environment are now inexorably determined by automation and future technological change. This is our myth of economic-technical causation. Unfortunately, as long as we give it credence and value, the myth grips us in its power and shapes our environment in its image—in the direction of purely impersonal techno-economic requirements and policies.

Techno-economic human action, because of its one-sidedness, is now gradually destroying our cities as viable centers for positive, healthy human living. Isolated economic logic is also destroying its own ground, for the economic sphere depends upon a fit “biological” environment, a workable society of cooperative personal relations, a body of practical knowledge, and a government system defining available economic resources and structuring the economic system. These sustaining systems are now rapidly deteriorating, particularly in our large metropolitan areas where the very overconcentrations are a prime economic phenomenon. Their biological and physical environments are heavily deteriorated, and are becoming progressively toxic. Yet mechanically we continue to predict their growth. There is hardly anything to be said regarding their aesthetic environments. The paradox of a rising economic standard of living, measured in dollar income, and a declining environmental standard of living, measured in aesthetic and social terms, is now manifesting itself. Social solidarity and interpersonal respect are declining under economic alienation into conflict and crime, while mental health problems are increasing.

Let us explore the effects of economic action in the extreme. Economics has been dubbed the “dismal science,” with some justification. The very contemplation of its theory and the estrangement from man, from nature, and from intrinsic values which its perspective accentuates, creates a depressing effect. On the other hand, the economic sphere provides indispensable human freedom and scope for individual action and community development.

If, for example, I assume absolute economic rationality, it leads to imbalance, to unreason in life. I transform everything in my world into instrumental resources for my personal ends. I even see myself as a commodity for sale on the market. I have no friends—friend is a noneconomic category. For the same reason, I cannot love my family—they become instrumental means rather than unique persons embodying final ends. I am indifferent to ugliness, beauty, or ethics as such. Health, too, is beyond my perspective. These are all non-economic categories of thinking and decision making.

The economic calculus—cost-benefit reasoning—is completely inadequate by itself as a logic for ordering our environment. Economic language speaks of tangibles and intangibles. This is an illusion produced by current economic thinking. There is only one cultural realm with multiple values which we intellectually disassemble and must, with balanced reason, reassemble into a unity again. Decisions regarding the environmental systems that undergird human life, the basic biological systems and social systems, must be made on their own grounds from principles of ecology, human relations, and government. These create the field for economic action and economic decision making, which must be legally restricted to a feasible, defined sphere. In formulating environmental policy and design programs and in developing the information to be presented to decision makers and to society, we need to differentiate all the various modes of thinking, valuing, and acting that are a part of our basic cultural tradition. These are required by the structure of the world.

The existential ends of human solidarity and love for man and nature, legal ends of justice, freedom, and control, economic ends of maximization, health ends of organic, emotional, and ecological fitness, artistic ends of symbolic meaning and beauty, and scientific ends of verifiable knowledge, must all play a proportionate role in the building of policies for our collective habitat. There is no other way to create humane, cultured cities and environments for our society.

ENVIRONMENTAL CHALLENGES TO THE POLICY AND DESIGN PROFESSIONS

The cultural imbalances in our present society, resulting from one-sided stress upon narrow, functional, techno-economic rationalism, present a challenge to the design professions and to those who hold to a larger humanistic tradition for Western culture. Among the policy and design professions I see a clear need for a reassessment of those institutions creating our socio-cultural space forms and the expansion of education and public administration toward humanization of our larger environment.

Two basic factors in modern life are generating the need for an intensive focus upon applied ecology, both social and natural. First, there is the well-known fact of the broad urbanization of society. In the near future, given our current values, more than 90 percent of the population of the United States will be living in cities and metropolitan areas. The bulk of present urban populations, however, is now already living in culturally obsolete urban environments inherited from previous periods. These environments are grossly

inadequate in the light of emergent human needs and standards of living. They are particularly lacking in respect to ecological balance, symbolic form, social relations, recreation facilities, and easy access to open space and nature. Entire subregions of the United States will have to be rearticulated as multipurpose landscapes with agricultural and horticultural parks to meet emergent human needs.

Urban and rural landscapes are the externalization of man's cultural purposes and, as cultural values have changed through time, the established landscape forms, man-made symbols, and social spaces have become progressively obsolete and unsatisfying. We are now entering a period when there is a fresh awareness and demand for reshaping the landscape in forms that express contemporary human values and meanings.

The second factor suggesting the transformation of the policy and administrative professions into applied general ecology is the recent growth of planning theory and methods which make possible large-scale analysis and design of total segments of the environment. Examples of these are watershed planning, metropolitan planning, regional planning, systems analysis, and data processing. Today there is a clear tendency to integrate these efforts under the more inclusive concept of environmental analysis and more unified policy making. This tendency is partly a result of natural and social science trends toward transdisciplinary thinking as indicated by the appearance of general systems theory, ecology, operations research, and subjects such as the symbolic forms of cultural systems.

Many of these conceptual frameworks are based upon the premise that the biosphere and human world constitute a single community or system. The old dualism of man versus nature is slowly being overcome. These concepts have also been extended to the inorganic world so that man, from this perspective, is seen as an integral part of a complex natural and cultural ecosystem. Man's designs and activities are now coming to have far-reaching ecological effects throughout the system. The task emerging for unified environmental planning is the collaborative work of providing theoretical and expressive design principles for creating new cultural landscapes and reconstructing the disfigurements of the past. The science of general ecology, yet to be fully elaborated, will provide a rational, practical foundation for this effort from one direction, while aesthetic and symbolic principles of design will provide meaning from another direction.

From a psychological viewpoint, the environmental management and design movement represents new, evolving attitudes and capacities

of man growing out of changing responses to the environment. New forms of transportation and changing time-distance relationships are modifying man's social and time perception. In rapid human movement, spatial relations are perceived first as general, regional landscape, and later at closer range as particular structures and small-scale landscape compositions. With all of this, the feeling for regional landscape is growing. Architectural modes, street and highway patterns, the proportion of open and built-up spaces, and other cultural elements are blending together as components of a larger, qualitative urban whole, yielding the impression that each regional landscape may have its own character.

Similarly, because of our extensive problems of environmental pollution, the new look in ecology is creating the notion of designed and consciously managed landscapes and natural life-forms. One of the most important factors that influences the quality of the landscape and human cultural adaptation is vegetation. However, the kinds and density of plants that can exist in any region are determined to a considerable degree by climate and soil resources. The plants in their turn influence the distribution of fish and wildlife. These relationships produce a close correlation between the chemical, biotic, cultural, and health features of the environment.

Insights of this kind have led many biologists and ecologists to maintain that regional landscapes are healthiest and least difficult to maintain under a state approximating dynamic balance—as between vegetation types, human and wildlife populations, the scale of resource conversion activities, and habitat conditions. A logical extension of such ideas is broad landscape design, with species adapted to the most favorable land use patterns, soil and water management, view horizon, disease control, biotic association, and other conditions subject to being optimized. Planting and forestation plans of various kinds—stream valley, headwater area, hedgerow, small woodland, wildlife area, park, farm, urban residence, and highway right-of-way—will gain new dimensions when considered as parts of an interrelated, composed regional landscape rather than as isolated plans and designs. The *general landscape plan* will then evolve as a new, needed component of urban and regional advisory plans. The general environmental landscape plan will be functional both in a technical, instrumental sense and in a deeper aesthetic, symbolic sense. It will be related to agricultural production and erosion, pollution, drainage, disease, and micro-climate control and will also express larger human meanings and purposes.

And only if the policy and management professions are equipped with theory and working procedures adequate to relate the elements

involved, will they be able to perform the needed collaborative function in landscape design at this level. This is clearly a task facing our central institutions of government, education and research, a task sufficient for the remainder of this century.

We have no rational, humanized theory of metropolitan growth, urban form, or environmental design. The whole history of American development and local government policy has been based upon the notion of quantitative growth indefinitely extended. A state of environmental and population equilibrium is therefore defined as stagnation—as something abnormal and threatening. This is ecological, aesthetic, and socio-economic illiteracy. However, the humanities and the biological and social sciences have largely ignored this situation to date.

Current and projected urban and agricultural growth patterns reveal little awareness of aesthetic needs, ecological relationships, or socio-economic principles among important leadership and professional groups in our society. Heretofore, the need for environmental conservation has been conceptualized primarily at the abstract national level and in the economic context of conserving natural resources. Such matters gain concrete reality only in specific regional and local space frameworks. Concurrently, widespread cultural habits of abstract economic calculation have veiled and obscured the realities of social costs, resource depletion, and environmental deterioration.

In urbanizing regions, formerly distinct urban, agrarian, and rural components of the environment are now becoming completely interwoven. In such regions, the conversion of natural elements into commodities (resources planning), the management and design of ecosystems (landscape planning), and the design of structures and facilities into an environment for living (urban planning) are spatially intermixed and interdependent cultural activities.

Environmental planning and economic development policies in an urban age must, therefore, consider the total environment. Similarly, ecological and landscape design principles need to be applied to the whole environment and to agricultural and urban processes in all their forms, including community planning as one mode of resource allocation and adaptation to the ecosystem. And conversely, community development must relate its research and design to the underlying ecological systems. A general socio-cultural space plan for a city or metropolitan area is at the same time a plan for ecological management, for resource allocation, and for landscape design, although these latter aspects are not recognized or made explicit under present community planning practices.

Our society is now, in its expressed growing dissatisfaction with present urban and regional settlements, posing the complex question of a meaningful, satisfying environment from various viewpoints. It is now clear that the design of environment will be a major domestic policy issue for at least the remainder of the twentieth century. Our universities, as centers of learning and forums for the many disciplines and professions involved in managing the unified environment, must play a major role in structuring this problem. They must help create a more profound knowledge of man and nature that will make possible higher levels of human life and meaning, and the symbolic expression of these values in the landscapes and settlement patterns of the future. Our policy watchwords today should be: beyond the narrowly scientific, the merely quantitative, the technical, and the economic, toward fully humanized, expressive symbolic forms—with man himself as his highest work of art on earth.