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TOWARD A CULTURAL CURRICULUM FOR THE FUTURE: A FIRST APPROXIMATION

DO WE NEED A NEW CURRICULUM?

Geography, like the other social sciences, is in a state of flux. A remarkably open spirit of inquiry prevails as geographers explore nondogmatic and flexible blends of ideas and methodologies in their research. Our meetings provide a forum for increasingly diverse sessions and papers, and our journals present ever more articles of a less inhibited, interdisciplinary bent. Although fewer geographers feel comfortable with subdisciplinary labels, most continue to find common ground within a discipline that has become, for them, more versatile and interesting.

The fashionable interpretation of this situation is to posit a paradigmatic shift, in which the prevailing atmosphere of "postmodernism" represents a backlash to the excesses of an earlier uncompromising social-science positivism ("modernism"). But such labels, drawn originally from architectural history, provide imperfect analogs for the social sciences. Also, many casual users of terms such as *modern* and *postmodern* are not really aware of how complex (and loaded) those concepts are. Another reservation is that Kuhn's (1962) paradigm shifts involved change over far longer time intervals and were intended to describe far more fundamental change—such as the Copernican Revolution. Such shifts are uncharacteristic of the social sciences, which seem

incapable of achieving paradigmatic consensus and which have responded to governmental or economic opportunities as often as they have been shaped by intellectual imperatives.

An alternative interpretation is to explain the ferment in the social sciences as a reaction to anachronistic disciplinary agendas. The current pervasive dissatisfaction with these agendas seems rooted in the fact that the social sciences diverged into separate disciplines during the late 1800s, and the boundaries that emerged then were fortuitous, to some degree arbitrary, and most certainly far removed from today's concerns. The division of intellectual labor represented a compromise between (*a*) the centrifugal or centripetal role of key personalities; (*b*) the cumulative impact of countless major and minor decisions by administrators in leading institutions; and (*c*) the interests of a literate public that strongly influenced government, university, and private-donor decisions to support specific research or academic appointments in new fields.

In the case of geography, despite the influence of exemplars such as Ritter and Humboldt, the creation of the discipline was primarily a matter of expediency, a response to public interest in colonial exploration, settlement expansion, and geopolitical goals. Like all the other new disciplines taking shape between 1885 and 1910, geography thrived on this diet. The Great Depression led, perhaps, to a modest retraction, but since the 1940s geography has responded continually, and all too willingly, to the exigencies of polity and economy. From military service in the 1940s, Cold War intelligence gathering in the 1950s, and economic development and market analysis in the 1960s and 1970s, geography has consistently turned to where the money is.

With hindsight, it seems almost ironic that *Man's Role in Changing the Face of the Earth* (Thomas 1956) found its way into print. This landmark volume, inspired by Carl O. Sauer, was so much ahead of its time that it assumed, at best, an uncomfortable place in the geography curriculum of the period. Its message ran counter to the illusion of inexorable progress, fed by steady economic growth and technological prowess, that by then formed the core of geography's research agenda. Given the uneasy welcome ac-

corded *Man's Role in Changing the Face of the Earth*, it was of little surprise that Earth Day of 1970 caught the discipline totally unprepared—and unable—to train young professionals with the biophysical competence to deal with environmental issues. But the first Earth Day represented more than geography's loss of a unique opportunity to lead in matters of the human use of the earth resources; it signaled the start of a period of increasing economic stringency.

A change in United States tax laws sapped private-sector research funding, and the first oil embargo ended an economic boom. As geology and biology introduced innovative environmental courses, geography's general science enrollments were eroded. Universities stabilized their social science faculties, and most geography departments, unable to increase their enrollments, had to face retrenchment. Government funding of social science research barely matched the rate of inflation, and opportunities for foreign field study began to decline.

Geography was, of course, not alone in this predicament, but the resulting flux was much more than the reversal of the intellectual pendulum implied by postmodernism. It is better diagnosed as a crisis of self-confidence, a questioning of disciplinary purpose and goals. After decades of opportunistic distortion of academic ideals, the social sciences have begun to accept the realities of no-growth and to reevaluate their curricula and research priorities. Geography, perhaps better than most of its interrelated fields, has recognized the cost of insularity and turned outward, displaying a new appetite for an eclectic menu of long-neglected themes.

More than at any other time in its history, geography now appears disposed to listen to what the increasingly diverse culture-interested professionals have to say. Consequently, this volume has an unusual opportunity not to proselytize but to inform students about cultural themes and issues, many of which have been glossed over in the traditional curriculum. Ideally, it will open a fruitful discourse that will help to bring geography back into the intellectual mainstream. To achieve that, I believe we must begin to grapple vigorously with major contemporary issues on a broad front, irregardless of how they are conven-

tionally partitioned among the social sciences, irrespective of how they are studied by other social scientists. The well-trained geographer must be free and able to pursue research across any intellectual frontier and beyond the entrenched positions of today's social sciences without being challenged at every disciplinary guardpost. And our curriculum must equip students with the skills and confidence needed to reconnoiter this terrain.

DEVISING A CULTURAL CURRICULUM

How does one develop a curriculum for the future when research is cheerfully diverging along new trajectories with little consensus? Ideally, one convenes a so-called Renaissance Weekend, with a few days for several dozen people to talk it out. That would not—and should not—lead to a unified master plan of some sort. More productive and more realistic would be a variety of different agendas that would serve to provoke creativity and innovation. Such alternative visions should emphasize conceptual questions and major issues rather than lists of nuts-and-bolts methods.

Any statement should also be constructive, explaining the nature of shared premises and drawing attention to potential intersections with related methodologies. We would, of course, express our personal convictions, but in a manner that does not belittle the intelligence or motivation of others who espouse different perspectives or arrange their priorities differently. Geography has far too long been inhibited by its old orthodoxies; it cannot now afford to proscribe new ones. The next generations of students should be able to choose from an attractive menu of options, both in regard to the range of cultural themes and with respect to particular research methodologies.

An essay such as this can only offer an example of how one such curriculum proposal might be developed. Of necessity, it must be a personal statement, reflecting the experience, interests, and views of one individual. To begin, however, I want to call attention to a number of the most pressing problems of the next ten to thirty years: (*a*) the consequences of exponential

demographic growth; (*b*) finite global resources and an endangered environment; (*c*) unequal allocation of resources, both between world regions and within most societies; (*d*) ethnic strife and political instability; and (*e*) replacement of culturally homogeneous societies by ones with increasing cultural, ethnic, or racial diversity. There probably is widespread agreement about the gravity of these problems, however they are formulated, but there will be substantial differences of opinion about whether or how to approach them professionally. The general assumption is that culture-interested geographers, like many other social scientists, have contributions to make in dealing with these general problems through analysis and formulation, understanding and education, or policy making and implementation.

The next step is to use these concerns to illustrate a methodology. My choice, for reasons of interest and experience, must be cultural ecology, but to illustrate my points effectively, I must first make clear the domain and substance of this methodology. The nuances of cultural ecology are too easily and too often misconstrued; they deserve a brief exposition in this context.

CULTURAL ECOLOGY: ONE POSSIBLE METHODOLOGY

Cultural ecology identifies an interdisciplinary arena of research that has rapidly attracted interest during the last few years (Butzer 1989). Although individual interests and methods vary widely, geographers and anthropologists, as well as a few sociologists and historians, have found cultural ecology to offer substantial common ground. Its practitioners as often as not consider it to be a perspective or a methodology rather than a subfield in its own right. There even is disagreement about the name itself, some preferring *human ecology, political ecology,* or *ecological anthropology.* But regardless of the labels, there is a fairly coherent methodology here when the different approaches are brought together and given a more humanistic cast. Its primary purpose and value in the present context are heuristic. As a didactic device it will serve students and outsiders well.

Cultural ecology focuses on four themes—

subsistence, work, reproduction, and resources—and the interrelationships between them, as embedded in the rules and values of a particular society (Butzer 1990b). The final qualifier is critical because it raises the relationship into human terms, emphasizing that people are mentalistic beings, although with animal needs. Cultural ecology must at some level include the reconciliation between mind and body. It is in this sense that there is dichotomy between people and nature—they are one, but they also are apart or different.

Cultural ecologists today deal with their subject matter at several levels, of which the most basic is the *functional*. Here the emphasis is positivist, with both systemic and processual perspectives (Knapp 1991). The first emphasizes cultural strategies as they are interlinked via feedback and influenced by a measure of economic rationalization. The second emphasizes cultural processes that affect continuity or change, such as routine or larger-scale adaptations, innovations, information diffusion, or migration. The functionalist approach initially focuses on food production, demography, and resource sustainability, taking a systemic view of the interconnections between society and nature. Typical themes include dietary, technological, settlement, reproductive, and maintenance strategies; energy and information flows, including feedback loops; and decision making and alternative options and outcomes. Empirical detail is essential to allow plausible links between conclusions and a data base. Given the prominent role of resources and resource management in this approach, functionalist cultural ecology requires considerable expertise in biophysical geography and offers an important integrative opportunity for physical and cultural expertise or, in prehistoric contexts, for geoarchaeology and anthropological archaeology. Functionalist cultural ecologists do not attempt to predict outcomes, although they may offer probability estimates; they explicitly recognize a multiplicity of social, economic, and environmental factors in understanding decision making and problem solving, and they view cultural adaptation as a reflection of human creativity.

The *behavioral* approach of cultural ecology

represents a higher level of analysis that is post-processual and nonnormative in spirit, although it builds on normative appreciation. The premise is that decision making and the selection of alternative strategies or solutions are based on community choices anchored in traditional values as much as they are on economic rationalization (Butzer 1990b). People spend as much mental energy focussing on interpersonal relationships as they do worrying about their livelihood—which is part of the constant tension between personal needs and social responsibilities. Behaviorist cultural ecologists incorporate (*a*) the dialectic of the individual and the community; (*b*) the interplay of individual and collective decisions in management, crisis mitigation, or fundamental change; and (*c*) the encoding of past experience in communal institutions and values as transmitted through several levels of social solidarity, such as family, community, society, ethnicity, or nation.

Individual initiative, actions, goal conflicts, and unpredictability constitute potential agents for change, especially as they are informed and screened through institutions or ideologies and resisted or implemented through community behavior. At this level the role of culture can be compared with a social contract. Food acquires symbolic meaning while significant actions are ideally taken in the context of the past ("who we are"), the present ("what we need"), and the future ("what we preserve for our grandchildren"). This form of cultural ecology requires more intensive person-on-person field research than its functionalist counterpoint; it is dependent on a degree of "insider" understanding of perceptions, attitudes, beliefs, and mental processes.

The *structuralist* perspective shifts from the community to the socioeconomic or sociopolitical context in which individuals or communities make decisions. The scale of study is augmented and the focus is no longer inward, on how the community thinks and acts in an idealized microcosm, but outward, on how the community's decisions are constrained by the structures of the real world (Hecht and Cockburn 1989; M. Watts 1983b). In the traditional rural world, tenant farmers and day laborers have limited access to land, credit, or markets, just as migrant labor in

the world of agribusiness has limited access to education, health care, and social services. In cities past and present, the urban poor or ethnic minorities are similarly limited in their access to jobs, amenities, or social advancement. In Third World countries, rural communities, if they are to have access to markets and services, are pressured to produce export crops rather than staples at the recurrent risk of subsistence stress, and landless farmers may be obliged to move to the frontiers of "development," clearing virgin forests or working as peons on large estates. Alternatively, ethnic or religious refugees are confined to rural slums after they have fled from the arbitrary use of force, chronic insecurity, or brutal expulsion. These are examples of marginalized communities that do not have the luxury of making informed decisions in conformity with deeper-seated values; typically, they have little or no choice and opt for short-term survival. This vision of a less benign world not governed by traditional cultural values is the realm of "political ecology." It emphasizes different dialectics between technology and development, productive sector and multinationals, and who gains and who loses.

These three forms of cultural ecology embrace distinctive questions, subjects, methodologies, and insights. They are complementary to one another, presenting different windows on the same subject matter. A good comprehension of one facilitates the study of another, and functionalist perspectives now are commonly combined with either a behaviorist or structuralist investigation. Different skills and predilections serve to steer students into particular directions, but despite the differences of personalities and philosophies, all continue to profit from exchange in the periodic markets of ideas.

The methodology outlined here emphasizes microstudy. However, the aggregate experience provided by productive case studies (within and without cultural ecology) can and should be directed to more deductive examinations of macroproblems.

I have now laid the groundwork for drafting a curriculum. The five broad themes outlined below are not predicated on cultural ecology, although that methodology would be useful in several instances. The selection and formulation of these themes reflect my professional experience and personal convictions. The first theme presents a fine-grained focus on institutions, values, and change with reference to traditional societies or to institutional "blockage" and reform in contemporary society. The second uses the time-honored polemic concerning the interrelationships between cultural, economic, and political change to argue for instruction in how to conduct theory-informed research in a pragmatic spirit. The third is directed to the problems of ethnicity, dominance, socioeconomic stratification, and strife that threaten to tear apart whole societies. The fourth concerns managed environments, sustainability, and conservation. Finally, the fifth looks at long-wave population and political-economic cycles and how demographic growth, deteriorating resources, and anarchy have begun to bring pieces of our world system to the brink of devolution. These five examples will allow me to demonstrate ways of weaving the insights of geography around pressing contemporary concerns.

ADAPTIVE PROCESSES AND CHANGE

New ideas are conceived and implemented by individuals, but they must be screened and approved by the community through the media of institutions and values.

Institutions are more than churches, courthouses, and bureaucracies. They run through all components of society, from family, schools, and social networks to professional sodalities, government, and religious groups. They include practices, relationships, and organizations that define and channel overlapping spheres of sociocultural, economic, political, and ideological behavior. Institutions serve as mechanisms to store, transmit, and translate cultural information into behavioral and material form. They also reflect values, the body of shared beliefs that express and prescribe individual and group behavior as well as responsibilities. Values serve to legitimize and interpret institutions, but they are difficult to define unambiguously, so that perceptions of values vary from person to person; they are also liable to change over time.

Some changes do not interfere with established ways of doing things, but those that appear to contradict values and institutional structures depend on a gradual building of consensus. They may require mobilization in a broad social context, perhaps in the face of crisis, and remain difficult to implement without the initiative, sanction, and ritual assurance of leaders or religious institutions. Racial integration, voting rights for women, or a declaration of war provide examples. Although institutions and values constrain the range of acceptable behavior, they remain human constructs, subject to changing interpretations.

Cultural adaptation is a processual concept applied to such changes. It is useful to characterize adjustments in established practices as a response to new information, structural problems, or external crises. As people cope with social stresses and constraints or external challenges and opportunities, their adaptive strategies ideally would be adjusted to maintain a balance among population, resources, and productivity. To elaborate an earlier point, adaptive decisions are consciously made by individuals in the context of community institutions and values. Most such decisions are small-scale and continuing, a matter of equilibrium maintenance, but they may be painful in personal terms, such as choosing methods to limit reproduction. Others are episodic, such as short-term responses to natural disasters, wars, or epidemics. Some are more fundamental, however, involving technological and behavioral accommodations, with possible adoption or loss of new cultural traits, in response to changing markets, urbanization, or industrialization (Butzer 1982, 286–94; 1990b).

The formulation of adaptation used here avoids its inherited biological connotations, such as measures of adaptive "success" or its supposed role for homeostasis—as opposed to facilitating a dynamic equilibrium. In a cultural context, adaptation must incorporate a strong humanistic component. For example, when land runs out in an overpopulated rural village, young adults may be obliged to migrate to a distant city to find employment. At the aggregate level this may be an anomalous process or just a statistic; at the personal level it commonly is a traumatic experi-

ence. Emigration implies a loss of close relationships, of a place rooted with personal memories, and of a landscape rich in symbolic meaning. That emotional loss may translate into permanent scars, a lack of anchoring in traditional values, and a sense of placelessness in the tenements of an industrial city. Alternatively, expatriates in a distant urban center may band together as a substitute support network, wherein myths of an idealized rural background are shared, sustained by the hope that their own children may be able to spend a future vacation back on the old farm, now deserted or converted into a tourist home. How much more painful transatlantic migration must have been for poor immigrants to a foreign land, scrabbling their way through several generations to regain some self-respect, clinging pitifully to small vestiges of their ethnic heritage. Painful, too, is migration translated to a contemporary idiom: mobile Mexican farm families moving from one trailer camp to another. Change commonly has profound human dimensions, and these too should be studied and chronicled.

Small wonder that traditional societies are wary of any change impinging on institutions and values that encode a legacy of experience derived from trial and error. Continuity with the past not only fills a deep emotional need but also cautions against taking risk. Change is a crapshoot, and players may win or lose. The conservative solution is to avoid the risks, even if stasis implies continuing high infant mortality rates, malnutrition, and disease; indeed, the cumulative costs of conservatism may prove to be higher than those deemed possible with change. More progressive societies may opt for the improvements promised by change, regardless of the potential hidden costs. Consequently, in the case of diffusion studies, the most interesting questions are the reasons why people may reject change or, if they accept it, why and how they accommodate it.

Such an explicitly cultural and humanistic approach to adaptive change would add important dimensions to the study of process. It would cast the community dialectics of continuity and change as an intriguing challenge to be understood rather than as an unwelcome "black box"

to be glossed over or ignored. Such tensions yield insights into the relationships between perceptions, attitudes, and behavior, as well as on the potential role of communities in the contemporary world. Attention to the dialectic between the individual and the community can be equally productive. Individualism can be a positive force for innovation or for resistance in adversity; it can also disrupt community cohesion or lead to the squandering of resources needed by future generations. That has profound implications for ideals and realities in ecological behavior. Last but not least there is the dialectic of specific gender roles and the question of the cultural, ecological, and biological roots of gender roles that has aroused considerable interest in a period of social change.

Such a fine-grained method of analytical disassembly is applicable to the institutional blockage (J. Bennett and Dahlberg 1990) that paralyzes so many governments today. Here the problems are of two kinds, individual and structural. First, elected representatives, as well as executives in government agencies, weigh their mandate to promote the common good against their own self-interest, especially as it is affected by the prospects of financial rewards and political pressure from vested interests capable of influencing their reelection. Bureaucracies, on the other hand, may be more interested in perpetuating themselves than in implementing directives for change. In the United States, some states have a history of demanding accountability, whereas others are equally notorious for corruption; the number of felony indictments among the appointees of successive federal administrations also varies sharply. Ethical standards in government tend to mirror the values of local societies or particular constituencies—a true challenge for reform. Second, the major structural problems impeding government responsiveness relate to scale. As the size of political systems expands, federal government tends to co-opt the functions of local and state administrations, which also are most likely to be controlled by entrenched interest groups. Concentration of power at the top tends to prescribe generic solutions for problems that are better dealt with in a particularistic context; at the same

time, powers are subdivided horizontally as well as hierarchically, with functional specialization of agencies, resulting in competitive jurisdictions and institutional response that is divided rather than holistic (J. Bennett and Dahlberg 1990). As a result, overly centralized ("verticalized") governments consume too much energy while neutralizing information pathways; crises are seldom anticipated (reaction rather than action), and response to grass-roots initiative tends to remain nominal (Butzer 1980).

This simplified outline illustrates the vast differences of scale between community and government in regard to the challenges of adaptive change. The community remains the best referent of cooperative human behavior, whereas the insights and recommendations of research must ultimately be communicated and possibly implemented at the level of government.

It is precisely to bridge this gap that nongovernmental organizations (NGOs) have sprung up in many countries and continue to coalesce and grow, providing an intermediate level of informal institutionalization. These include progressive corporations (on the Japanese model) that promote genuine worker participation, provide welfare, and undertake environmental initiatives; volunteer organizations (such as the Sierra Club) that have graduated from watchdog groups to constructive forces for change; and Third World NGOs that comprise a mix of grass-roots and professional participants (both indigenous and foreign) who strive to advise and work with government as well as international organizations. In a wide variety of ways, the NGOs are taking on both governmental and societal functions; their expanding role in the future justifies guarded optimism that today's institutional blockage can be remedied, both through bottom-up participation and through institutional reform.

The NGOs provide a range of suitable opportunities for effective engagement by future generations of scholars. Academicians will also need to expend more energy in directly mobilizing the many communities embedded within modern society, especially through their educational mission; at the same time, consultants used by government must act with greater responsibility, and

academicians within government should be actively used to channel information and policy initiatives; finally, all academicians must strive for institutional reform and provide better role models in the matter of values. In short, our future curriculum must include participation in our own system.

SOCIOPOLITICAL COMPLEXITY AND ECONOMIC BEHAVIOR

The yawning gulf between small communities and megastates is connected on the yardstick of human history by millennia of directional change known as cultural evolution (Newson 1976). The idea is that increasing social and political complexity will eventually culminate in urbanized, bureaucratic states with socioeconomic stratification. Anthropologists have long used this conceptual device to arrange their case studies of various ethnographic groups around the globe according to different criteria of social complexity; they then invoke archaeological evidence of increasing technological and economic sophistication to argue that their own (synchronic) record of graduated complexity is a palimpsest of directional (diachronic) change across the last ten millennia (A. Johnson and T. Earle 1987). That argument is flawed for several reasons: (*a*) social organization observed on some Pacific islands during the 1920s cannot be applied as a valid model for social organization in northwestern Europe in, say, 800 B.C.; (*b*) archaeological inferences of social hierarchies before the threshold of the historical era tend to be no more than interpretations; and (*c*) the model simply assumes that socioeconomic functions are linear and hierarchical and that social and cultural phenomena are tightly correlated (Butzer 1990a).

In rejecting the historicity and implied explanatory value of such evolutionary stages, it becomes apparent that the processes of long-term cultural, economic, and political change remain largely inferential. According to one body of views ("integration theories"), stratified state societies arose in response to stress: (*a*) in dealing with warfare, (*b*) in accommodating more and increasingly complex information, (*c*) in mobilizing labor forces for public works or the utilization of critical resources, and (*d*) in integrating a diversified resource region or guaranteeing access to critical imports (Tainter 1988, 34). The state and its developing institutions thus served broad social needs by centralizing and coordinating disparate social, economic, and spatial components. Although the state provided distinct advantages for almost all segments of a society, it also concentrated power in the hands of a few, thus increasing inequality and social stratification. Another body of opinion ("conflict theories") claims that economic stratification created internal conflicts, so that state institutions were devised as coercive mechanisms to safeguard the power and privilege of the elite at the expense of the masses (Tainter 1988, 33).

Explicating competing views in this fashion has heuristic value, but we are not in the business of canvassing opinions. Unfortunately, empirical testing is limited to the archaeological evidence, since the earliest states—in Mesopotamia and Egypt—came into existence a few centuries before the documentary record begins. Egyptian cemeteries reveal a rapid differentiation of wealth just before formalization of the first state structures. That argues for intermeshed processes but does not clarify whether stratification led to political integration or vice versa. Another such chicken-and-egg question is whether technological changes that required increased labor investment in food production ("intensification") stimulated new sociopolitical accommodations or were themselves the result of sociopolitical changes. Here we have the advantage of comparative, historical, or cross-cultural data sets. These do not show a correlation between increasing institutional complexity and greater socioeconomic stratification; intensification takes place in contexts both with and without social inequalities.

The root problem of deductive inference can be illustrated by the case of Egypt, where large-scale irrigation was in place by 3000 B.C. Wittfogel (1957) claimed that this system was imposed by central authority, controlled by a bureaucracy, and used as a tool of empowerment to dominate a dependent peasantry. In fact, irrigation was subdivided into autonomous natural units (flood basins) that were not interlinked until the 1860s of our era. These independent canal

networks were locally operated and maintained, and there is no record of officials assigned to administer them; instead, the communities within any one basin assumed such responsibilities under the village headmen, with individuals taking turns in attending to particular tasks (Butzer 1976). Big estates utilized sharecroppers or wage laborers, but the bulk of the peasantry held permanent leaseholds, with obligations equivalent to the paying of income tax—namely, a percentage of the produce. Decisions were made to meet subsistence needs and market demands, not the dictates of great absentee landlords. Open questions remain, however, about the changing proportion and status of sharecroppers versus tenant farmers over time. In Mesopotamia, another irrigation society, the context differed in that all water came from a centralized system of radial canals that could indeed be controlled and manipulated; but we know little about the system of land tenure and its implications for free decision making.

In the Egyptian example, neither the integrationists nor the conflict theorists were asking the right questions, let alone providing the correct answers. The very complexity of the empirical data should tell us that traditional causality models, whether unicausal or multicausal, work poorly, if at all. Factors that appear to be intermeshed need not be directly interlinked. Here the systemic analog becomes useful, because it posits multiple feedback loops; theoretically, there can be several parallel outcomes of "change," some of which are only distantly interlinked. R. N. Adams (1988) has therefore offered a very different theoretical framework for cultural evolution, one based on energy processes. He views societal change as a natural selection of self-organizing energy forms and its inherent triggering processes. Whether this systemic view can be operationalized is less important than that such natural selection calls for less simplistic questions and places a premium on a good and complex data base.

The old model of cultural evolution is only one example of how a body of assumptions can be foisted on a legitimate question so as to generate spurious inferences. It is well known that ancient empires controlled external commerce

and internal revenue flows and that twentieth-century governments have imposed downward-extending economic systems affecting basic decisions at the grass-roots level. But can we assume that all "directed" economies will create a "dependent" rural sector? Was political power necessary to induce or compel a rural society to increase productivity and, indirectly, elite wealth? Does the commercialization of agriculture require state pressures, or does the state merely provide institutions that facilitate commercialization? Does feudalism imply a dependent class, if not a servile one, practicing agriculture according to the will of an empowered elite? Such questions have profound implications for functionalist and behaviorist case studies in "traditional peasant societies," because an over-hasty structural generalization can color the questions asked and impede collection of a more complex, pragmatic data base.

The directed economies found in parts of the Third World today are historically anomalous. Global interdependency is a new phenomenon, and the necessary degree of government intervention in rural affairs is possible only with modern communication. Historical investigations that attempt to impose such a model on their data confuse institutional complexity with economic disempowerment. By analogy, future historians could claim that the imposition of an income tax undermined American individualism. Much of the confusion stems from imperfect cultural and linguistic translation of obligations, either in the past or in another culture. Americans pay property, school, utility, sales, social security, Medicare, and income taxes; they believe they own their property, but in fact local government does, because if property taxes are not paid, confiscation results; if they sell or inherit property, they are subject to other taxes. This is not substantially different from medieval (feudal) permanent leaseholds, except that the duke or squire has been replaced by county or city government.

To take a concrete example, country people in eastern and northern Spain lived under a semi-feudal seigniorial system until the 1830s (Butzer 1990b). The lord who owned the land was entitled to a sixth or a tenth of the agricultural pro-

duce, equivalent to an income tax in lieu of property taxes; he received fees from the use of gristmills, the village bread ovens, the butchery, the olive press, etc., equivalent to utility district taxes; and his charges for hunting, trapping, or collecting dead branches for fuel were akin to hunting and fishing licenses. The Catholic Church took a cut of the first fruits, crops, or young animals of the season and a tithe proportional to the crop yield; in turn it provided most of the services expected of modern county governments, as well as charity and, in larger towns, hospital facilities. The total tax equivalent was as low as 30 percent of actual income, more typically close to a third, not counting selective sales taxes—similar to the tax liabilities of a middle-income American today and lower than those of European counterparts. When the aristocracy was "bought out" during the 1830s, the local community began charging similar fees for use of facilities or the resources of the commons, but the safeguards on sales of lands were lifted, with the result that richer people began to buy up the lands of poorer people. Both before and after 1830, however, commercial crops were expanded or shifted in response to market demand, but this pattern was not universal. In pre-Revolutionary France peasants were liable for up to two-thirds of their produce, an unusually stiff demand. In southern Spain a substantial percentage of the rural population had—and still has—no access to land, not even as sharecroppers; common people lived in large villages and hired out as day-laborers on large estates.

Like the Egyptian and Mesopotamian examples, this case and the exceptions noted show that few generalizations hold up to critical scrutiny—except perhaps the generalization that misconceptions are deeply ingrained. It is unacceptable simply to assume that hegemonic forces of one kind or other restricted or controlled decision making in traditional societies. Whether they pertain to ancient societies or the contemporary Third World, questions must be examined empirically and without preconceptions. Institutionalized inequalities of wealth or power do not necessarily imply economic dependency or imposed economic behavior in either the rural or urban world. Systemic interrelationships are

not that simple. Choice from a restricted set of options can confront broad segments of society in the industrialized world just as well as in the Third World—yet researchers tend to ask different questions abroad than at home, and they incline to interpret their data with different biases.

Theoretically informed research is highly desirable, but it is equally important that theory be used as a means, not as an end. Understanding is the end. Elevating theory to the status of an ideology can lead to reification of models even though they are contradicted by counter-examples. Deductive formulation of research hypotheses is important for generating fresh questions, but if the hypotheses are not periodically subjected to critical reappraisal, they can also become blinders, skewing the questions and slanting the inferences. As the caveats raised above show, deductivist approaches to structural issues can have unfortunate consequences. In a new curriculum, theoretically informed research should also be pragmatic in spirit. This pragmatism will require seminars that critically consider alternative theories and models so that students can acquire a sound grasp of the advantages and limitations of each.

ETHNIC STRATIFICATION AND CONFLICT

Because general evolutionary theories do not yet allow a satisfactory understanding of structural constraints and inequality, it is preferable to look for alternative but more particularistic approaches to the realities of socioeconomic stratification. One such opening is suggested by the Columbian quincentenary, which should remind us that conquest societies were established in the New World after 1492 (Butzer 1992a; 1992c).

In Mexico and Peru, where large indigenous populations with complex social organization survived the Spanish Conquest, the native peoples lost much of their land as their numbers dwindled through epidemic disease and settlements were consolidated or relocated. By 1810, rural Indians were mainly reduced to sharecroppers on large estates, with barely enough land for subsistence, while those living in cities or peri-urban barrios supplied labor for textile factories, construction, and other menial jobs. Vari-

ous mixed-race categories continued to expand demographically, until the aggregate of mestizos formed the majority of the population; such "new peoples" occupied intermediate positions within a complex socioeconomic and racial hierarchy. The nominally white Creole elite began to intermarry with mestizos by 1810, but even after independence, socioeconomic stratification remained unchanged until at least 1917, despite an advanced degree of ethnic and racial homogenization. There was greater social mobility, of course, through military service or client-patron relationships that facilitated "marrying up," and families could also sink in the hierarchy through bankruptcy or political disgrace. Nonetheless, the conquest had created entrenched inequalities reified through family networking, type of occupation, or place of residence and perpetuated through differential access to property, credit, and education. This class order, less formal or rigid than that of the colonial period, continues to have a life of its own.

In British North America—and its American, Canadian, and' Caribbean successors—indigenous peoples were progressively expelled from their lands, the survivors marginalized as government wards on reservations. In the Caribbean and American South, African slave labor was imported to work on sugar or cotton plantations. After emancipation, this institutionalized stratification persisted informally. In Canada the conquered French population was reduced to an underprivileged class, even after constitutional reform in the nineteenth century, and remains locked in cultural and economic confrontation with the national majority.

In the northern United States the flood of ethnic immigrants between 1820 and 1914 normally went to the bottom of the socioeconomic ladder. Those who were physically indistinguishable (Europeans) could begin to improve their socioeconomic lot after a generation or two, particularly in the Midwest or West. But in the East they long remained excluded from the best schools and positions by local family networks (those appearing in the *Social Register*) dating back to the country's independence. For Mexican and Asian immigrants, upward mobility was and remains much more difficult. These examples represent

immigration by infiltration (immigrant-subordinate) rather than conquest (immigrant-dominant), but like a conquered people, recent immigrants typically have access only to the least desirable economic niches, receive inferior educations and health care, and are treated harshly under the law. With circumscribed options, the mass of ethnic immigrants remains undereducated and poor across many generations, particularly if new waves of different ethnic immigrants continue to reinforce the structures of inequality by entering the system from the bottom. Even internal migration, such as the country-to-city movements of the Industrial Revolution, can serve to disfranchise the descendants of unskilled newcomers, creating a class system (as in Britain) that perpetuates unequal access to resources and opportunities.

The last five hundred years provide countless documented examples of how colonization, international migration, or internal migration have created inequality and social stratification on a vast scale. Such phenomena are not new, as various ancient and medieval warrior castes or colonial aristocracies show. They may well be the most common, tangible, and universal processes that create, sustain, or accentuate social stratification. Allowing for differences of scale, neocolonialism—with its transnational control of captive economies—suggests another such category of institutionalized inequality that limits the opportunities of immense numbers of people. Ultimately, this too is a matter of ethnicity.

Ethnicity promises to be the most pressing social, cultural, and political problem of the foreseeable future. Increasing friction and sociopolitical mobilization based on old ethnic differences (significant or not, depending on the perspective) threaten to tear apart the state fabrics created during the last two centuries (Mikesell and Murphy 1991), as political organizations once held together by dynastic loyalties are displaced by states based on national loyalties. Flemings and Walloons in Belgium now function as autonomous states within a state. Czechoslovakia has broken up into two parts, and Yugoslavia is dissolving in a bloodbath among southern Slavs. The former Soviet Union has embarked on a course of subdivision and realignment, the out-

come of which is anybody's guess. India is threatened by violent three-way religious-ethnic differences, and Canada is almost paralyzed by the dissonance between French and English speakers.

The concept of *Blut und Boden*—ethnicity and territory—articulated by Bismarck (in an ambiguous phrase that literally means "blood and soil") derives from the French Revolution, which created the first state consciously based on nationalism. The ensuing nineteenth-century world order of national states that incorporated the aspirations of only the dominant national group appears destined for major revision, if not fundamental transformation. As the constraints imposed by superpower confederacies disintegrate, ethnic minorities are freer to express their growing lack of confidence that national states serve the interests of all their peoples. Much as human thought is acted out in the guise of animal behavior, new ethnic aspirations are projected onto a tangible landscape, embedded with a mix of old and new symbolic meaning. The number of atomistic states in the United Nations is rapidly approaching three hundred, and there is no end in sight. With strife or fragmentation well underway, venturesome social scientists are in active pursuit, judging by the flood of new books (Balibar and Wallerstein 1991; Hobsbawm 1992; Nash 1989; R. Walker 1988). The curriculum, as usual, is bogged down in committee, plagued by uncertainties about how to reconcile past patterns of investigation with new needs. Culturally oriented geographers of all kinds have much to contribute to a comprehension of both the particularistic and the common problems. It is to be hoped that they will help to chart new ways to understand the nesting of ethnic identity, territorial aspirations, and political-economic organizations.

In a way parallel to the sundering of national fabrics through the new militancy of old ethnicities, once homogeneous societies in Europe and North America are confronted with a new multicultural diversity as they continue to absorb streams of foreign workers and immigrants that are more culturally or racially distinct than ever before. Pakistanis and Antillians in Britain, Algerians in France, Turks in Germany, and Hispanics and Asians in the United States have created tenacious new realities that cannot be accommo-

dated by traditional goals of homogenization; yet the dominant national groups resist contemplating a multicultural solution. As ethnic friction and mobilization reinforce social stratification, older social cleavages remaining from the Industrial Revolution or the Slave Era are reinvigorated or compounded.

Very close to home, several generations of future cultural geographers have an open mandate to study immigrant communities so as to educate the dominant group, influence policy makers, and ultimately help build transethnic bridges. The scale of crisis in failed integration continues to build, with superficial acculturation more than offset by a disintegration of traditional values among immigrant populations. The resulting social problems and insecurity exacerbate ethnic friction, setting in train feedback patterns (all too familiar from the faltering accommodation of African-Americans into the mainstream) that tacitly institutionalize stratification. The challenge is to find ways to enable such communities to hold on to their own cultural values, to reinforce their informal institutions, and to allow them to retain their self-esteem as they seek acceptance rather than rejection by the dominant group. Once a minority has been totally deculturated— and before it can properly embrace the value system of the dominant group—the social problems become almost intractable. If nothing else, the very scale of finding a new multicultural accommodation with old and new minorities, which will make up almost half of the American population within thirty or forty years, is a compelling reason for dealing constructively with the issues today rather than paying the incalculable costs of failure tomorrow.

MANAGED ENVIRONMENTS AND SUSTAINED PRODUCTIVITY

In line with bringing a new curriculum for cultural geography to bear on contemporary "cultural" problems, another obvious arena for application is the dilemma of how to feed exploding world populations in a time of deteriorating environmental quality. These are broad questions that lend themselves particularly well to a cultural ecological approach.

Most world environments have long been transformed into human ecosystems. They are dominated by open landscapes planted with a small selection of cultivars or supporting herds of domesticated livestock. Human settlements of many sizes, interlinked by roads, interrupt in the form of built environments. There also are vestiges of spontaneous vegetation, their biota composed of indigenous species or a mix of introduced and indigenous forms. Even large stands of forest may be little more than tree farms.

Landscape painters have been attracted to such humanized landscapes, interpreting them as symbols of human husbandry redolent of beauty and an age-old harmony between humankind and nature. More recent generations of ecoenvironmentalists have read these same landscapes as a record of human despoliation through which countless biota have been removed or irretrievably extirpated, to be replaced by alien plants and animals. Amid patterned fields they search for evidence of eroded soils or point to the impact of now-aggressive floods along stream channels. Both views may well be valid, to one degree or other; they exemplify two competing perspectives on the environment, as well as a more universal ambivalence as to how to reconcile the basic needs of human survival with higher needs for scenic beauty and recreation.

Cultural ecologists are primarily concerned with the second of these tensions. Despite their nominal emphasis of survival strategies, the heart of the matter is how to manage natural resources so that productivity can be sustained indefinitely (Brookfield 1988; W. Clarke 1990). Cultural ecologists also recognize that a wise long-term strategy for sustained use involves much more than economic considerations, with aesthetic and symbolic perceptions significantly shaping attitudes and attachment to the environment. Indeed, the presumption of cultural ecologists is that traditional societies will, whenever possible, seek "satisficer" rather than "maximization" solutions— that is, solutions that reduce risk, provide reasonable returns, and are consonant with their own cultural values. It is further assumed that traditional dietary and management strategies incorporate the cumulative experience of trial and error over long spans of time, and that substantial parts

of that experience are incorporated into long-term cultural attitudes and behavior through ritual and symbolic expression (Ellen 1982).

Environmental degradation is not universal but specific to particular places, times, or technologies (Worster 1988). Is there a linear correlation between population growth and increasing degradation? Do some peoples tend their environment with greater care than others, and if so, is that a result of different experience or attitudes? Does a similar technology consistently have a similar ecological impact? In a broad way, of course, the Industrial Revolution has spawned technologies that have damaged large areas across the globe and at exponentially growing rates (Headrick 1988), but to deal with a particular case we need to understand the full range of variables that affect strategies of environmental management.

The long-term picture suggests that past environmental behavior was complex and difficult to predict (Butzer 1982, 123–56, 181; 1990a). The earliest Neolithic agricultural peoples in Europe had a massive impact on vegetation in some areas; the destruction of woodland was out of all proportion to the small number of groups, probably numbering only several score people. This probably reflected the use of fire to open forests for grazing or short-term cultivation. One might describe this as exploitative management, probably due to little cumulative experience; such land use may even have been unviable in the long run, that is, without a decline in productivity or an involuntary increase in mobility. From Bronze Age to Roman times, populations and settlement density increased substantially, to several orders of magnitude greater than in Neolithic times, but in many regions the evidence for environmental degradation increased arithmetically rather than exponentially. In other areas, rapid population growth coincided with episodes of striking soil erosion; in yet other cases, massive soil erosion ensued after widespread depopulation and land abandonment.

Two inferences are suggested by this seemingly confused picture. First, Bronze Age and later environments were overwhelmingly managed rather than pristine. In northeastern Scotland land remained largely open, even when

small populations used the environment for extensive grazing. In eastern Spain woodlands were extensively reduced to secondary scrub but recovered during periods of unrest and population decline; there was some loss of topsoil, but nothing catastrophic until the medieval period. This supports the notion of environments managed with the benefit of considerable experience, maintaining their productivity for many centuries at a time. Even growing populations and shifts to new technologies and labor strategies left this equilibrium in place as often as not, which implies that a conservationist bias is adaptive and that it should be the rule rather than the exception. Second, those periods and regions affected by disequilibrium suggest additional, complicating variables. Conservationist safeguards normally used to minimize risk for the environment appear to have been abandoned by some populations at certain times. Perhaps this was in response to insecurity in regard to long-term occupancy or to extreme subsistence stress or unanticipated population growth. Information may also have been misread; for example, when people move into new environments, they may introduce practices based on experience derived elsewhere and unsuitable in the new setting. Finally, a shift to a new technology may have had its hidden costs.

There are, then, salient factors affecting resource management other than population density and technology. Equal emphasis should be given to long-term regional experience, short-term subsistence stress, long-term demographic crises, and insecurity that would place the value of long-term strategies in doubt. It seems counterintuitive not to include differences of environmental attitudes or land ethics here, but in traditional societies land use is conservative, and communities are probably aware that maximization strategies are maladaptive. "Wise use" or "working with nature" is not included in the European religious or philosophic heritage, unlike China's, but such an attitude was an explicit part of the secular and pragmatic sphere, as Greek and Roman agronomic works inform us.

The problem is that emigrants transplanted to a new environment can lose their traditional attitudes in regard to transgenerational stewardship of a piece of land. Equally so, liberalization of land sales or short-term leasing can totally undermine the ethic of long-term conservation. Finally, the loss of traditional bearings in the modern world, additionally disrupted by increasing mobility, can spell disaster for strategies that once committed farmers to preserve their land and its productivity for future generations. In other words, environmental attitudes and land ethics are contextual. They can be assumed in stable, traditional societies. Today they have become the overriding problem, almost on a worldwide scale, and must now literally be taught and inculcated in the hope that new generations in consumer societies will reassume their responsibilities in the social contract that binds people and generations.

Managed environments differ from natural ecosystems in four fundamental ways: (*a*) they partially or almost completely substitute cultivars, livestock, and associated weeds for indigenous biotic components; (*b*) they introduce differences in systemic energy flow, that is, the productivity of food plants and meat-on-the-hoof versus primary productivity and animal biomass; (*c*) they entail structural changes, in that the nature and diversity of biota are culturally controlled, so that productivity can be maintained only by the investment of technology and labor (the managed ecosystem is patently artificial); and (*d*) they require equilibrium conditions different from those of a natural ecosystem, because a managed environment is commonly not allowed to undergo successional change (except in the case of shifting agriculture), whereas the related substitutions and structural changes short-circuit normal feedback loops, creating a metastable system liable to degradation or even catastrophic simplification. The inherent problems of managed environments vary greatly between the agribusiness approach, which is predicated on massive capital investment, and the ethnoagriculture perspective, which emphasizes traditional methods of maintaining fertility and the advantages of intercropping and polyculture, not least as a natural means to control pests and pathogens (Soule and Piper 1992).

Critical questions for cultural ecology concern the long-term balance of inputs and outputs; for example, would productivity decline

without increasing technological or labor investment? Sustainability of a managed ecosystem could thus be defined as an indefinite maintenance of productivity without an increase of either technology or labor. Equally pertinent is whether a managed environment has the resilience to recover—with the help of remedial measures—after an episode of declining productivity resulting from degradation. Can stream baseflow be resuscitated, peak discharges reduced, and topsoils revitalized through improvement of ground cover and soil amelioration? That is the question as it would be framed by a cultural ecologist concerned with long-term productivity. An ecoenvironmentalist would probably frame the question very differently: if an environment is protected and allowed to revert to wilderness, what is the potential for reconstitution of its biota, hydrology, and soils over several centuries? The focus would be on components (biota) and structure (pathways) rather than on energy flows (productivity) and equilibrium state.

The question of biotic reconstitution demonstrates why ecoenvironmentalists and cultural ecologists must recover their common ground and natural complementarity. Reconstitution of what? A landscape of eight thousand years ago, not affected by agriculture, as reconstructed from paleoecological evidence? An implausible datum, because post-Pleistocene species migration and forest succession was still incomplete at that time. The picture gets murkier, because Holocene vegetation and human land use coevolved in the Mediterranean basin and Europe (Birks et al. 1988), so that even the rank order of characteristic species cannot be predicted for a hypothetical "natural ecosystem." In the New World, there is a proclivity to consider biotic patterns described by the earliest travelers as pristine. This is incorrect, because seemingly primeval woodlands of 1750 were the open and ecologically simplified landscapes of 1500, prior to indigenous population collapse (Denevan 1992b; B. L. Turner and Butzer 1992). The Peten rainforest had been totally cleared before A.D. 1000, suggesting that primeval forests seen here by the first Spaniards can indeed be reconstituted within centuries, perhaps even on degraded soils; that in turn raises doubts about some popular assumptions in re-

gard to biodiversity. Natural fires, storm catastrophes, and the selective effect of plant diseases have demonstrably altered the rank order of dominant and subdominant forest species over the millennia, whereas human "protection" favors forest composition and structures different from any of those recorded paleoecologically (Schoonmaker and Foster 1991).

Prevailing concepts of wilderness are simplistic, even as applied to prehistoric times. More cautious designations such as "old-growth forest" avoid a great deal of conceptual confusion and offer more practicable norms for current conservation efforts. The unromantic fact is that almost all world environments have been humanized or even managed for millennia. Functionalist concerns about inputs, productivity, sustainable utilization, and stability are no less important than humanistic ones about images, symbolic roles, or psychological needs. A new curriculum must develop a more balanced agenda for conservationist land use, environmental preservation, and the mitigation of ecological damage. Such an agenda should serve to reverse environmental deterioration and provide long-term incentives for business and industry, while not alienating a public increasingly alarmed by radical environmentalists. Finally, it will require substantially greater collaboration between academia and NGOs. Without a holistic, unified, and realistic approach, the diverse academic clusters and advocacy groups are liable to be discredited, their efforts ignored.

GROWTH, DECLINE, AND THE PROSPECTS OF DEVOLUTION

Managed environments have thresholds beyond which they begin to unravel, but problems of metastable equilibrium also plague the human ecosystem as a whole. Historians and archaeologists have long been aware that empires both rise and fall (Cowgill 1988; Tainter 1988), and historical demographers note that, over the long term, populations grow and then decline in "millennial long-waves" of variable wavelength and amplitude (Whitmore et al. 1990). At a smaller scale, since about 1600, there also have been cycles of economic growth coupled with technological in-

novation followed by deep recession and social crises; these have a periodicity of roughly fifty years ("Kondratieff cycles") (B. Berry 1991; Earle 1992). Such periodic or aperiodic cycles of political, demographic, or economic growth and decline highlight significant internal processes (rather than "extraterrestrial intervention"!), such as the interplay of positive and negative feedback loops. The role of the inherent dynamics resulting from feedbacks are widely recognized by environmental scientists, for example, in anticipating hidden costs. Analogous processes in the economic arena—or in more complex systems that also incorporate institutions, resources, and demography—are less widely recognized, even though they have drawn increasing attention by an interdisciplinary spectrum of social scientists.

Since 1500, the population of the Old World has been increasing exponentially, following the demographic disaster of the Black Death (after 1347). At a macroscale, this process was coupled with growing economic and political integration. It began during the late 1400s, as strong rulers put an end to chronic political instability and banking institutions facilitated rapid commercial growth in western Europe. The economic upswing was initially fueled by the influx of New World bullion, then by the profits of the slave trade and plantation sugar, and later by cotton. Asia was added to this increasingly global economic network, exploited indirectly for raw materials and as a captive market for finished goods. The profits of this international trading system, which was controlled by British naval power, financed the Industrial Revolution, even after the slave trade ebbed and plantation agriculture fell away. By compensating for scarce home resources, industrialization created employment just as the English population struggled through its demographic transition. Surplus farm labor flowed to the burgeoning industrial cities that formed the manufacturing hub of a world empire. Other nations, one by one, were drawn into the demographic transition. Countries with lagging or limited industrialization found a safety valve in massive emigration to Argentina, Canada, and especially the United States, which became a major economic and political competitor of Britain.

This is a five-hundred-year scenario of economic centralization, accelerating energy flows, and systemic growth, by which a core of capitalist states grew at the expense of a vast periphery of dependent nations. It is the focus of the world-system concept (Wallerstein 1974; Braudel 1984; Gilpin 1987), a geopolitical model at a scale so vast that the successive changes in power structure during the twentieth century are little more than details. Population growth becomes part of a feedback loop integral to economic integration and systemic expansion. Prior to the unique modern world system there had been earlier imperial systems ("world empires") and interconnected mega-economies ("world economies") at a continental scale (Wallerstein 1974; Abu-Lughod 1989). The world-system model provides another interpretation of growth and decline, although the latter is given little attention.

Models, at least until they become reified, have heuristic value in that they draw attention to apparent regularities and stimulate research on new questions, until fresh problems are recognized that in turn generate further models. The world system is the ultimate structural model, illuminating the political economy of an interdependent world effectively controlled by the industrialized nations. Alternative models emphasize different perspectives, usually at different scales, serving to focus research on the interplay of other sets of variables.

At the longest scale, the prehistoric record verifies long-wave population cycles long before the advent of capitalism or geopolitical structures (Butzer 1990a). Archaeological surveys in the Near East and Europe show that prehistoric populations repeatedly increased, then leveled off before declining or even disappearing. Whereas settlement histories vary from one district to another, declines or discontinuities of several centuries' duration tended to affect larger regions, and at least two such breaks seem to have affected most of Europe. Possible explanations include (a) new epidemic diseases of zoonotic origin—the prehistoric Old World precursors of the pandemics that swept away 85 percent of the New World populations after 1500; (b) declining productivity of mismanaged, primitive agrosys-

tems—which would affect only smaller areas; and (c) warfare with ethnic displacement—but only in later prehistoric times.

The rise and fall of empires, from Mexico to the Indus Valley to China, provide more specific insights at an intermediate scale. The most intriguing case is ancient Egypt, where four cycles of political centralization, economic expansion, and demographic growth—each followed by decentralization, economic dissipation, and population decline—can be identified between 3200 B.C. and A.D. 600 (Butzer 1976; 1980; 1984). During the first two cycles of growth, Egypt was self-contained, with very limited external commerce; during the third there was external expansion, whereas during the fourth, Egypt was a dependent part of a much larger regional system. Superimposed on a long-term trend of population growth, these cycles show notable regularities. Economic and demographic growth coincided with times of strong government and institutional change, suggesting an effective channeling of centripetal forces that favored systemic integration to stimulate higher productivity and sustain larger populations. Decline coincided with weak and unstable government, allowing centrifugal forces to undermine political institutions and socioeconomic structures to the point where productivity and population dropped alarmingly.

Feedbacks between growth and political-economic integration, in one form or other, are quite generally invoked to explain imperial expansion, but decline is much more difficult to rationalize (Cowgill 1988; Abu-Lughod 1989). Predicating his claim primarily on the exemplary case of the Roman Empire, Tainter (1988) proposes a general interpretation based on changing marginal product, that is, returns per increased unit of investment. Expansion initially provides a high rate of return, but the logistics of transport and communication eventually impose a limit on further conquest. At that point there are no more accumulated surpluses to appropriate from the conquered nations, and the costs of administration and occupation rise. As the subject populations gain rights and benefits, the marginal returns of empire continue to fall, leading to counterproductive increases of taxation until the

real output begins to decline. Although true capitalist economies can achieve higher returns through commercial hegemony, it is tempting to view British colonial devolution in the 1950s as a response to accelerating marginal costs. However appealing, this model overemphasizes strictly economic factors and must be stretched to accommodate the integration and disintegration of non-expansive, self-contained societies.

Both economic and geopolitical models overemphasize energy flows at the expense of information pathways; they also ignore the implications of population growth, facilitated or stimulated by economic expansion, which creates fundamental problems for the system once expansion gives way to retraction. An alternative possibility is to stress the latent instability of political-economic systems made vulnerable to a number of possible triggering mechanisms by political inefficiency and severe economic constraints. Ecological simplification suggests a useful analog, to examine political devolution as a product of inherent thresholds and multiple feedbacks (Butzer 1980). From such a perspective, economic fragmentation may be only a dependent variable.

Effective government can facilitate the dissemination of new information and technology. It provides the necessary security for commercial networks and long-term investment in agricultural growth. It can minimize risk through institutions that provide direct safeguards (e.g., storage) or indirect mitigation of shortfalls by forging interregional links. Ideally, government will provide the leadership through which crises can be anticipated and, if they occur, accommodated by short-term remedial measures or long-term institutional adaptation. Just as readily, government can also be the cause of decline, through inadequate institutional organization and response, inaction or the cumulative impact of poor or uninformed decisions, and the placement of the selfish interests of an elite above those of the common good, that is, dissipating energy into nonsustaining activities. Finally, the roles of managerial and bureaucratic castes tend to change over time: initially they serve to improve efficiency by channeling information; with time they tend to grow like organisms, feeding on en-

ergy, impeding information flow, and reducing efficiency. Whatever the factors reducing government efficiency, greater fiscal demands are the result.

Periods of sustained demographic growth eventually bring rural populations close to "carrying capacity," at a particular level of technology and socioeconomic organization. This makes common people vulnerable to shortfalls, malnutrition, and disease; harvest failures or virulent epidemics can lead to heavy mortality (Rotberg and Raab 1985; Newman 1990). In England almost two centuries of population growth came to an abrupt halt with the harvest disaster of 1315–16; recurrent bouts of Black Death after 1348 then reduced the population by half, with demographic stagnation continuing until 1520 (Grigg 1980, 51–82). A convincing case of population overshoot can be seen in Spain, where the population doubled between 1510 and 1590, leading to painful "corrections" in the wake of economic stagnation. Rural births declined 25 percent between 1580 and 1620, and at least 500,000 people were swept away by two major epidemics; together with military losses and emigration, the overall population declined by 15 percent between 1600 and 1660 (Butzer 1990b). These examples highlight the impact of malnutrition and susceptibility to disease as a result of overpopulation. When, in addition to population pressure, economic recession leads to increasing fiscal demands, the resulting rural flight, disintensification, and depopulation can reduce net productivity, thus deepening recession. Whether long-term economic recession, population pressures, and declining productivity lead to substantial population decline and political devolution depends in substantial part on government effectiveness. The point is not to explain some case of political collapse in the historical past but to recognize and alert ourselves to the feedbacks typical of "decline." The context for such concerns is that during the last three hundred years, world population has increased from 500 million to 5 billion. Although demographic growth seems to be leveling off, there are premonitions that economic growth has also reached a plateau. Such a high world population may prove difficult to sustain with declining marginal returns, and such

"stabilization" would imply adapting to nongrowth of per capita income in the developed world. For the Third World the picture is even more worrisome.

In point of fact, we have been witnessing government failure and spreading anarchy, coupled with overpopulation and famine, in the Horn of Africa. Ethiopia devolved after 1973 in the midst of deepening famine, the cronies of the old order standing idly by and unable even to distribute incoming food shipments. A year later the senile emperor was shunted aside, and inexperienced military men began a fifteen-year experiment in using famine as a tool in civil war, resettling starving minorities in drastically different environments and thus reducing the once-exploding population of Ethiopia by perhaps a third. Now a victorious coalition of two minority groups is trying to put the pieces back together. In Sudan a military government has continued to wage a brutal ethnic and religious vendetta against its minority tribes for a dozen years, both sides using hunger as a weapon and refusing outside food aid, leaving vast regions in southern Sudan almost devoid of people. Somalia, equally plagued by overpopulation and a chain of drought years, had devolved into a random, internecine struggle until United Nations troops intervened to distribute food and impose a semblance of order.

In each instance incompetent governments, unable or unwilling to cope with exploding populations and inadequate resources, succumbed to civil war, the countries slipping into national or regional anarchy. As examples of devolution they are qualified only by the fact that they are embedded within an otherwise operational world system. They illustrate how an entire region of Africa has been able to deteriorate into chaos, with drastic population decline, under our very eyes. Seduced by the world-system model, we try to explain away the significance of what is going on as a result of past superpower rivalries, when instead we should perhaps be looking to precolonial sociopolitical models. The pattern in the Horn of Africa is not unique; other countries, such as Afghanistan and the new nations of the Caucasus, also threaten to disintegrate. This is not a time for simple interpretations but for pragmatic investigation of dysfunctional systems.

Exactly what are the various ecological and structural problems, and how are they interconnected? What are the possible options for containment or resolution through the efforts of NGOs? When is international intervention justified, or should overarching international structures be devised to contain internal anarchy?

Thus far, disintegration has been restricted to component parts of the world system, and during the Sahel drought of the 1970s or the Horn anarchy since 1990, its potential spread has been artificially contained with the advantage of unprecedented communications. But containment of anarchy can be implemented only selectively, as the unraveling of Cambodia, Liberia, and Bosnia show. Other nations seem unwilling to lead, so that the United States, severely constrained by declining marginal returns, is left with the responsibility of intervention. Sooner or later it will no longer be possible to check disintegration, the potential devolution of the former Soviet Union suggesting one such possibility. Only our blind faith in the efficacy of modern communications and international cooperation has made future devolution unthinkable.

Large parts of the world can now be regarded as metastable, as once-competitive world alliances come apart and allow mismanagement, population pressures, and a pervasive declining productivity to create widespread subsistence stress (Newman 1990). The issues are far more complex than simply the ethical dimensions of military intervention; international efforts to contain and mitigate economic and subsistence disasters will depend on popular goodwill, fiscal realities, and a fragile equation in regard to truly collaborative participation by all affluent countries. The promised new world order looks more like a new time of troubles, compounding the steadily mounting problems of global environmental deterioration.

TOWARD A BROADER CONSENSUS

These are examples of macroscale problems, historically flavored but also contemporary and immediate. They transcend the scope of any one discipline, which is appropriate if geography is to broaden its specifically cultural horizons and engage in a wider discourse of issues. The problems to be confronted today cannot and should not be carved up into niches, and future research must bring people together if it is to be effective. That will require accepting diversity, rejecting exclusivity, and emphasizing complementarity—both within and outside geography.

Other professionals no doubt will prefer to revise, rearrange, rewrite, or replace much of what I have written, depending on their vision of what is most important. Still, I suspect that many would agree in principle with at least a few of the premises on which my position is based. First, several cultural perspectives on contemporary problems require professional expertise in aspects of biology or the earth sciences, whereas some do not. Others call for expertise in anthropology, economics, or another social science. Genuine competence in a pertinent cognate field is highly recommended, both as a practical skill and as a passport to productive interdisciplinary exchange.

Second, many geographers are genuinely interested in people. Dealing directly with people gives not only real insights into how things are done but also a glimpse of why they are done in a particular way, perhaps how people think about things, and what their attitudes and inhibitions are. Direct conversation and informally structured interviews are not the preserve of any one discipline, but anthropologists are particularly well informed about the advantages and shortcomings of direct engagement, and geography students can learn a great deal from those experiences. A profound understanding of the many faces of culture can best be gained from hands-on experience, even though reflection on other authors' thoughts about culture, cultural behavior, and cultural processes remains indispensable.

Third, dealing with people, human actions, and a host of other variables is a tremendous challenge to conceptual organization. Subjective and objective views of actions or events are both important. At greater distance such dichotomies tend to fade as the problem shifts to sorting out multiple variables, for which systemic models may be of heuristic help, if only to appreciate the complexity of causality and explanation. Struc-

tural models serve equally well to put things in another kind of perspective. Regardless of the particular subject matter, it is very helpful to have a firm grounding in several alternative philosophical and theoretical positions. They can be of great assistance both in the field and in subsequent discourse and publication. Many professionals use different stances in alternation, consciously or not, sometimes explicitly but more often as unobtrusively as possible.

Fourth, in-depth fieldwork or small-scale community studies are a fundamental part of culturally oriented research (B. L. Turner 1989), providing the closest approximation of laboratory conditions in which cognitive decisions and economic actions can be analyzed to explain how people evaluate different strategies and choose among available options. Not everyone needs to engage in such work, but all must understand its purpose and significance. Small communities are the threads, dysfunctional or healthy, that constitute the fabric of urban or rural societies. Whether in a Third World village, a Texas barrio, or a New Hampshire town, the small community is where the social scientist can acquire hands-on experience in understanding how real people act out their lives with respect to community, institutions, accepted cultural behavior, and ideologies. It can be the microcosm in which to observe the role of group cooperation, reproductive strategies, attitudes to the environment, social inequities, and intolerance of the other. Experience gained in working with small communities with simplified parameters can contribute to formulating informal policy or to understanding the interrelationships of larger communities within much more complex societies.

Fifth, there are significant advantages to shifting the scale of study from micro to macro and back again. Such a shift switches attention from detailed processes to large-scale patterns, from the behavioral and partly subjective realm to the systemic or structural arena, and from personalized resource needs to actual management of resources. Each perspective informs the other and stimulates the formulation of fresh hypotheses.

Fortunately, shifting of scale is a habitual skill for many geographers.

Sixth, and finally, historical perspectives are a standard component of most culture-related research. Quite apart from culture-historical problems of intrinsic interest, culture itself is cumulative, representing learned behavior that is transmitted from generation to generation. It cannot be divorced from a diachronic perspective. Historical examples provide important comparative evidence as precedents for contemporary phenomena. Time depth commonly adds a welcome dimension to a fuzzy synchronic picture. In general, historical investigation serves to analyze and monitor processes, to explain contemporary configurations, and to draw attention to trends that may have future implications.

I suspect that most geographers interested in cultural themes would agree in principle with four or five of these premises. If so, that would be a good start. But finding some common ground is far more important than achieving consensus. A curriculum is, after all, but a pathway of studies. Each one of us must write his or her own agenda, identifying either current issues or processes that link historical experience with contemporary problems. These should form the core of our experimental seminars, with students subsequently encouraged to move on and focus on themes of particular interest. In this way, our seminars would, ideally, attract a broad spectrum of students, including those best qualified in public policy or international relations. Above all, a new curriculum would encourage competence, conscience, and commitment rather than expedience.

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CULTURAL GEOGRAPHY
AS DISCOVERY

Walking was my project before reading. The text I read was the town; the book I made up was a map. First I had walked across one of our side yards to the blackened alley with its buried dime. Now I walked to piano lessons, four long blocks north of school and three zigzag blocks into an Irish neighborhood near Thomas Boulevard.

I pushed at my map's edges. Alone at night I added newly memorized streets and blocks to old streets and blocks, and imagined connecting them on foot. From my parents' earliest injunctions I felt that my life depended on keeping it all straight— remembering where on earth I lived, that is, in re- lation to where I had walked. It was dead reckon- ing. On darkened evenings I came home exultant, secretive, often from some exotic leafy curb a mile beyond what I had known at lunch, where I had peered up at the street sign, hugging the cold pole, and fixed the intersection in my mind. What joy, what relief, eased me as I pushed open the heavy front door!—joy and relief because, from the very trackless waste, I had located home, family, and the dinner table once again. (Dillard 1987, 44)

As curious as it sounds, let me set the stage for this essay by exhorting you to put aside your books. If you are truly to gain some sense of the power of landscape, and consequently the power of cultural geography, get yourself away from