checkered career. An initial belief that irrigation was neither common nor early in Mesoamerican prehistory has been refuted by an increasing quantity of data. Two key questions remain unanswered, however. The first is whether the Gulf Coast Olmec culture, which was certainly nonhydraulic, reached a state level of organization. Sanders and Price consider the Olmec to have been organized as a chiefdom, but admit the possibility that many investigators will consider them to have reached civilization. If they did, the hydraulic argument is inapplicable to the origin of the earliest of the Mesoamerican states. The second unresolved problem is whether the irrigation systems of highland Mesoamerica were of large enough scale to account for the astounding degree of urbanization and the centralization that can be inferred therefrom. Sanders and Price offer little more than the assertion that they were, indeed, large enough. Those of us who believe that they were not will remain unconvinced.

The emphasis upon symbiosis as a cause of social complexity is a fresher argument than the hydraulic theory. The striking ecological diversity of Mesoamerica is impressive, and the importance of both local and long-distance trade in the area is attested by the archeological record. The authors' comments about the effect of unequal distribution of resources on social stratification and the contribution of distributive institutions to the organization of social systems, as well as their concept of symbiotic regions including complementary highland and lowland zones, demonstrate the utility of the symbiotic principle.

When they turn to lowland Mesoamerica, however, Sanders and Price encounter serious difficulties in explaining the origin of the state. Since irrigation is impossible in the region and the stimulus for local symbiosis is low, they are forced to see lowland states as an adaptive response to contact with highland hydraulic states. Like diffusionistic arguments, which are rejected in chapter 3, this explanation is not really explanatory since it does not make clear "the function and configuration of the entire socioeconomic systems" (pp. 68–69).

The general weakness of this and other ecological attempts to deal with lowland Mesoamerica is disturbing. A consideration of specifics, however, suggests that the problem lies not in the approaches but in the quality of the available data. To make inferences about lowland ecology, one must resort to a series of simplistic, and generally untested, assumptions—the lowlands are ecologically homogeneous; the only possible agricultural adaptation is the purest of swidden systems; permanency of settlement is difficult or impossible to maintain. Are such generalizations adequate for understanding adaptation in lowland Mesoamerica? The awkward results achieved by using them suggests that they are not. Until more thorough investigations like that of Flannery and Coe on the Pacific coast have been undertaken, the ecological approach will continue to operate under handicaps in lowland Mesoamerica.

The foregoing summary falls short of providing an impression of the wealth of stimulating ideas presented in *Mesoamerica*. In choosing points to emphasize, I have neglected a large range of equally worthy topics. An almost endless series of problems for discussion among students and for testing in the field can be generated by a careful reading.

Statements of the ecological approach to archeology that are far more detailed and sophisticated than the preliminary effort reviewed here will doubtless be forthcoming. I doubt, however, that any of them will produce more discussion and intellectual stimulation.

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Metaphor in Sociology

Social Change and History. Aspects of the Western Theory of Development. ROBERT A. NISBET. Oxford University Press, New York, 1969. x + 342 pp. $6.75.

From Aristotle's day down to our own times, Robert Nisbet tells us, Western thought has been in the grip of a metaphor—"development"—which has warped and stunted our capacity to chart and explain social change. To see how influential the residues of the largely Victorian variants of this biological metaphor are today, one has only to look into the pages of Reinhold Niebuhr, Arnold Toynbee, Teilhard de Chardin, "the reigning theorists of the Soviet Union," among philosophers of history and theologians; Talcott Parsons, Marion Levy, Neil Smelser, Robert Bellah, among sociologists; Julian Steward and Elman Service among anthropologists; W. W. Rostow among political economists—and there are many, many others, mainly but not exclusively linked to the so-called functionalist point of view. These spokesmen, at once the propagators and victims of the myth and mystique of "development," readily identify themselves by their commitment to doubtful ideas of "stages of growth," "progress," "purpose," "continuity," "direction," "evolutionary universals," "uniformitarianism," "comparative method," "civilization"—images which, in Nisbet's view, inevitably subserve parochial ethnocentric interests.

If we would escape toppling into the abyss of these evolutionist metaphors, Nisbet warns, we must start at once to build new foundations. Realistic assessments of change will only become ours when we execute strict studies of determinate forms of the social behavior of individuals in specified contexts during defined times. Today, Nisbet explains, sociology confronts the same choice as the one which the great Maitland put to anthropology at the beginning of the century, namely, the choice between "being history or being nothing." "Fluxes of empirical circumstances" and sequences of "events" have once again to be accepted as the stuff of actual histories; indeed, we must regain the courage to admit the prime significance of "intrusions" (exogenous variables) as the key agencies of change, and to see Fixity rather than Change as the root social fact.

Long before Nisbet has come to the end of these far-flung historical-analytical reflections, the conclusion becomes inescapable that he has here issued one of the most extraordinary challenges presented by a contemporary social theorist to so-called "forward-looking" modern sensibilities. In their own way, Nisbet's attacks on renowned American social scientists are more startling, and his proposals for a reform in our approaches to social change are even more sweeping, than were C. Wright Mills's barbs in his *The Sociological Imagination*. Indeed, Nisbet's book has the ring of a prophetic summons to abandon evangelical immanentism as the American public philosophy in favor of a strictly nonethnocentric historical view of social change, one allegedly grounded in superior metaphysical and sociological awarenesses which are luckily found to provide to cultural conservatism the firm foundation too long denied to it by the developmental mys-

ticisms heedlessly spread among us by the masses and classes alike.

What fortunes may we expect Nisbet's book to have? I hazard a guess that, however much it may delight general readers, his effort will be pronounced a Sisyphean one by his professional colleagues. For my part, although I largely share Nisbet's hopes for a reform in our ways of thinking about sociology and historical process, and have myself been pleading a related cause for many years in successive studies on the "future of illusions," especially the "cosmic and apocalyptic illusions about redemptive futures," I am put off by the excesses of both his historical and his logical analysis of the situation; above all, I fear that the drastic remedies he proposes threaten more loss than gain. The perplexing turns of his concluding "Reflections" bring to mind the famed paradoxes ascribed to Zeno of Elea, implying the self-contradictoriness of the idea of motion. Can it be that Nisbet is a latter-day Zeno, in whose pages we must expect to find Eleatic paradoxes because his true theme, like that of his ancient predecessor, is the fearsome price we must all pay for slighting the reality of Being in favor of the appearance of Becoming?

Nisbet is very largely right on his key claim: the study of social change does need to be freed from the power of seductive metaphors hastily plucked from disparate contexts. But the alleged affliction of sociology by the growth and development metaphor is hardly so special a case as he implies. All the sciences—certainly all the social sciences—have regularly drawn metaphors from other sciences with mixed scientific and parascientific effects. And social theory has in its winding career absorbed metaphors at least as problematic as those Nisbet lampoons, metaphors which allowed little or no room for a theory of natural history of persons, societies, cultures, and which always required reference to "intrusions" to account for all human action. Nor have the borrowings of sociology from biology by any means all been noxious. A proper history of biological influence on social thought would make certain to mention not only primitive Social Darwinism and Spencerian excesses but also Claude Bernard, L. J. Henderson, urban ecology, the current school of ethologists.

Nisbet's appeal to "history" is far too simple to produce the desired sociological and intellectual reform. His image of concept-free history hardly represents the prevailing practice of historians, who have often been more immersed in metahistorical and metasociological reifications than have sociologists. It is exactly this situation which forced many historians and historically oriented scholars (including Max Weber, who is one of Nisbet's heroes) to move away from that discipline in the direction of theoretically better-grounded historical sociology. It is not sociologists who have been guilty of fathering the personified abstractions that clutter the pages of history books.

Nisbet is right on another major point: the concept of "social change" is in a sorry state. But he need not have written about the systematic literature on social change as though it has never emerged from the cocoon of mythic developmentalism—an effect he achieves by overlooking or underemphasizing discussions that are not within his antecedently fixed frames (the absence of reference to Ogburn's work speaks volumes). In his tendency to polarize ideas, he sacrifices the fruits of discriminating scholarship. Moreover, he might surely have told us more about changes in social arrangement and experience which prompted social theorists after 1775 to see change and development at every turn. The thrust to so-called developmental theories was general in the 19th century; the need to understand and explain the large changes of the time led thinkers and theorists of every sort to look for ways of expressing process. And here I must speak directly to Nisbet's sharp attacks on leading contemporary sociologists and anthropologists in the name of history. Parsons, Steward, and their students are avowedly neo-evolutionists, but they came to their positions, as they tell us themselves, in order to relate to realities of societal process—*histories*—not readily open to analysis in other perspectives. Many of Nisbet's attacks from the side of empirical history of events are in one respect a welcome claim that neither sociology nor anthropology can afford to manufacture history *out of nothing*; but some of his charges imply a claim that these disciplines have no legitimate domain outside of history.

Can we look to Nisbet to become the great peacemaker in the war between sociology and history? The more closely one scans his arguments the more the conviction grows that he has scrambled the message he may have originally intended for the contending parties and has been led into a costly double deflation of the intellectual symbolic and emotional values of both ordinary men and social scientists. The first deflation results from a tacit abandonment of central coordinates of societal and culturological analysis. Structural contexts, cultural settings, ecological scenes of action, complex conjunctures largely escape notice in these pages. In his effort to prove that reference to development always implies illicit metaphors, Nisbet loses sight of patterned probabilities. In his attack on immanentism, he essentially rejects every form of systemic bondedness involved in aggregate process, in effect fracturing the social world.

The second deflation takes the form of the abandonment of historicity in the name of "history." The only history Nisbet truly allows is past history, *res gesta*, as processed by behaviorally oriented (sociological) historians of social behavior, and then only as told from the outside as strings of events largely conceived to undergo change as a result of intrusions from without. In this light, societal movement, cultural experience, symbolic innovations lose their context and import. Individuals and groups are scarcely allowed to have or to make their histories.

Thus although promising to reconcile the differences between sociology and history, Nisbet actually broadens the gap between them. Narrowing the horizon of history, he forces sociology into constricted stances.

Some of our doubts on these scores might have been reduced if Nisbet had analyzed notable illustrations of serial patterns of social change. But he gives us only a passing reference to Teggart's interesting but inconclusive *Rome and China*, which can hardly serve as a crucial demonstration of the preponderance of intrusions as factors in historical process.

Nisbet asserts that the claimed advances in sociological theory since the heyday of evolutionism of the 19th century are largely illusory. Whether or not he means this statement to be taken literally, he seems to forget that the great advances in the realm of empirical study since those days has been profoundly stimulated by new contexts of inquiry and new kinds of understanding. Our very image of societal and historical process continues to be transformed by new concepts in physics and

the biological sciences and new theories of scientific explanation. Except for a few highly selective citations of Ernst Mayr and Thomas Kuhn, Nisbet does not relate in any depth to such recent currents of thought.

In the setting of Maitland's time it was right for the revered legal historian to warn that "by and by anthropology will have the choice between being history or being nothing." Today, in my view, Maitland's challenge turns on history itself, as indeed it seems at one point to do even to Nisbet. Now it is history's turn to confront an uncomfortable variant of Maitland's choice, the choice between being nothing at all or being a discipline with ever deepening understanding of its presuppositions and contents and ever stronger links with relevant perspectives of adjacent disciplines—chiefly sociology and anthropology.

Our own century had to draw near and striking new advances had to be made in mathematics and logic before Zeno's paradoxes could be freshly countered. I trust that we shall not have to wait quite so long to chart our way through Nisbet's paradoxes. In any case, his challenge will be a continuing reminder that we dare not remain content with our current resources—semantic, empirical, philosophic—if we wish to make progress in the perplexing field of social change. But now, at the very moment when we are caught in the rolling surf of no fewer than a half-dozen world-wide revolutions, few sociologists are likely to be persuaded, even by so sensitive and learned a colleague as Nisbet, that we shall understand our motley histories and truly appreciate social change only if we pay proper respect to Fixity.

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A Special Kind of Habitat

Ecological Notes on Wall Vegetation. S. SEGAL. Junk, The Hague, 1969. 326 pp., illus., + appendices. Paper, $16.65.

Modern ecologists may not realize it, but they owe a large debt of gratitude to the stonemasons of classical and medieval civilizations for providing them a unique long-term experimental and recording device. This is generally known as the *wall.*

Europe is laced with walls of all ages. They can be dated, their composition analyzed, their life cycle established according to the variables of height, exposure to prevailing winds, and proximity to roads, forests, and cities, and many of them support vegetation. Segal has taken a good look at walls and examined their floras from every imaginable point of view.

Fundamentally, Segal has produced a phytosociological analysis of wall floras in the more oceanic parts of Europe, where they are best developed. The entire spectrum of plant life, from the flowering plants down through the cryptogams, comes under analysis, and, as might be expected, a great deal of space is devoted to terminology of associations, tables of species, and other minutiae discouraging to a general reader. However, a vast amount of interesting information lies intercalated even in the more technical chapters, making the book more fascinating with every page.

Wall ecology is a field with a meager literature, most of it produced by workers in the Netherlands. A logical companion volume to Segal's would be that of his countryman J. J. Barkman, on *Phytosociology and Ecology of Cryptogamic Epiphytes* (1958). Both of these books are landmarks in their fields, and it is instructive to note that these painstaking studies have been accomplished in the most unlikely place imaginable, a country in which urbanization and agricultural development have long since eliminated most of the natural habitats for plants. Even walls, as Segal points out, are rapidly disappearing through the restoration and renovation of the cities and the use of modern materials more resistant to the ravages of time.

To be eligible for inclusion in his study, walls had to fulfill certain requirements: to be "built of stones or bricks, jointed with not too hard a type of mortar, of fairly considerable age, and situated in an environment in which no prolonged period of drought prevails." With this restriction, the studies perforce were limited to the parts of western Europe which have rather oceanic climates. Nevertheless, this still included a large area, and one in which a great number of ancient walls are preserved. The life expectancy of walls in the region is about 600 years, in which time walls usually become so eroded that they become a part of the "natural" environment.

Given the variables of height, composition, and age, the availability of geographic-climatic gradients makes walls sensitive instruments of natural selection. In each region, walls have permitted colonization of slightly or markedly different vegetation associations, depending on the species available, their differential tolerances for the substrate, and their competitive or successional relations with each other. A perusal of the various "spectra" analyzed—taxonomic, ploidy, life form, growth form, sociability, floral colors, dissemination types, formational and distributional—shows what a rich data bank the wall can be. One might also like to know to what extent, if any, new races have developed on the wall habitat in the time available, but this problem evidently is not yet ready for study.

Walls are often the only remaining habitats for plants belonging to floras which, in the course of urbanization and industrialization, have disappeared from the surrounding area. Wall floras thus may provide a sensitive means of determining relative air pollution of segments of urban areas, in situations where corticolous epiphytes are no longer available for this purpose.

The author's lively imagination provides some especially interesting bits of information. He found, for example, that there was a striking difference between the wall vegetation of Roman Catholic churches and Protestant churches of the same ages. "The damage by moisture and deterioration of the masonry is worse in churches of Protestant parishes. This is indubitably associated with the lesser frequency of the services and the period of heating. The walls cool off more rapidly and take up water vapour from the congregations more easily." Thus, Roman Catholic churches rarely support good mural vegetation, whereas Protestant ones are usually rich in vegetation.

Although the study was developed in depth only with reference to standing walls, a brief comparison was made with road- and sidewalk-crack vegetation and other wall-like situations. Summaries of the work are given in English, French, German, and Dutch, followed by an extensive bibliography.

This research is an object lesson to any who feel that botanical research must be pursued in the few remaining wild areas of the world.

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