

APPROACHES TO REGIONAL ANALYSIS: A SYNTHESIS

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All discord, harmony not understood. Alexander Pope, Essay on Man, 1:289

In my dictionary I find a synthesis defined as “a complex whole made up of a number of parts united.”¹ The suggestions of complexity and unity are bothersome, however, because the synthesis of approaches to regional analysis presented in this paper is simplistic at best, and we have all found that the parts hardly seem united at times. There is perhaps only one advantage to be gained from the simplification—that poorly developed or new approaches to studying the geography of an area² may be identified more readily.

The paper begins with certain assertions concerning geography’s role among the sciences. A synthesis of apparently dichotomous approaches to geographic understanding is then proposed³, and the concluding remarks are directed to the question of new approaches. The route towards such new approaches begins with analysis of the inadequacies of the proposed synthesis, and continues with discussion of possible solutions to the inadequacies via generalizations produced in General Systems Theory.⁴

GEOGRAPHY AMONG THE SCIENCES

James Conant describes science as an interconnected series of concepts and conceptual schemes that have developed as a result of experimentation and observation and are fruitful of further experimentation and observation as man explores his universe. He characterizes the

methods of exploration—scientific method—as comprising speculative general ideas, deductive reasoning, and experimentation. Like all brief statements on any subject, these are ambiguous and incomplete outside of the expanded context given them by the author. They do provide a useful setting for the first thesis of this paper, however, that: *Geographers are, like any other scientists, identified not so much by the phenomena they study, as by the integrating concepts and processes that they stress.*⁵ James Blaut expresses the point nicely, saying that the objects dealt with by science are not natural entities, ultimate objects, but are rather sets of interlocking propositions about systems.⁶

Systems may be viewed in a variety of way and hence the variety of propositions that may be developed concerning them. The particular set of propositions stressed by any science depends upon its point of view, the perspective in looking at systems that it instills in its members as they progress from novices to accepted membership in that select professional core that serves as guardian and proponent of the viewpoint. As Kenneth Boulding has said, subjects “carve out for themselves certain elements of the experience of man and develop theories and patterns of research activity which yield satisfaction in understanding, and which are appropriate to the special segments.”⁷ Within this context, our second and third theses are thus that: *The geographic point of view is spatial and that: The*

¹ *The Oxford Universal Dictionary on Historical Principles* (3rd ed., 1955).

² As applied later in the paper, and as befits the purpose of the President’s Program, the particular area of concern is the United States, but the remarks should apply generally.

³ The ideas are directly attributable to Joseph S. Berliner, who developed them in his review of anthropology: “The Feet of the Natives are Large: An Essay on Anthropology by an Economist,” *Current Anthropology*, Vol. 3 (1962), pp. 47-77.

⁴ The idea of General Systems Theory was originally formulated by Ludwig von Bertalanffy, “General System Theory: A New Approach to Unity of Science,” *Human Biology*, Vol. 23 (1951), pp. 303- 61. The journal *General Systems* is a basic source for all interested in General Systems Theory.

⁵ This contrasts with Hartshorne’s view that geography is a chorological science similar to the chronological sciences but contrasting with the science classified by categories of phenomena. See *The Nature of Geography*, Chapters 4, 5, and 9, and *Perspective on the Nature of Geography*, Chapters 2, 3, and 11. We are not alone in questioning Hartshorne’s views, for a similar debate has been raging for some time in history. Anyone interested in the debate should refer to the journal *History and Theory*.

⁶ James M. Blaut, “Object and Relationship,” *The Professional Geographer*, Vol. 14 (1962), pp. 1-7

⁷ Kenneth E. Boulding, “General Systems Theory – The Skeleton of Science,” *Management Science*, Vol. 2 (1956), p. 197.

*integrating concepts and processes of the geographer relate to spatial arrangements and distribution's, to spatial integration, to spatial interactions and organization, and to spatial processes*⁸.

But the experience of man encompasses many systems, and the geographer does not apply his spatial perspective to all. The second and third theses define the way of viewing, but not that which is viewed. Which system is examined by geographers? Hartshorne properly describes it as comprising "the earth as the home of man." A geographer is so trained and inclined that he assumes a spatial perspective in his analysis. But this perspective is not his sole perquisite, for other scientists take such a viewpoint. His contribution is that it is he who provides the spatial perspective so important to any understanding of the system comprising the earth as the home of man. This definition logically excludes from geography studies of other systems from a spatial viewpoint. We are well aware, for example, that when certain physical

⁸ A caveat is appropriate at this point. Edward Shils' remarks concerning sociology, which appear in the *Epilogue* to his monumental collection *Theories of Society* (with Talcott Parsons, Kasper D. Naegele, and Jesse R. Pitts, and published by the Free Press in two volumes in 1961), might well have been written about the scientific status of contemporary geography:

In so far as a science is a coherent body of empirically supported propositions which retain their stability within a particular theoretical framework, sociology is not a science today. The empirically verified propositions at a level of low particularity are many, as they rise toward generality they become fewer, not because the structure of any science requires it, but because of the deficient coherence of the analytical scheme that explicitly or implicitly guides these inquiries, and because the techniques of research have still not been sufficiently well-adapted to the observation of more abstractly-formulated variability. Nor, for that matter, has theory become sufficiently articulated and explicit. The gap between general theory and actual observation is still considerable.

This statement subsumes R. B. Braithwaite's views concerning the structure of a science, namely that a science properly includes several elements: (a) the facts observed and the simple inductive generalizations based upon these facts; (b) abstract logical constructs; and (c) scientific theories, which are initially stated as hypothesis, and only assume the status of valid and accepted theory when the simple inductive generalizations and the final deductions of the abstract logical constructs coincide. "Coincidence" is achieved when a satisfactory level of explanation of the inductive generalizations from the deductive constructs is achieved. Nagel provides an excellent discussion of the four modes on scientific explanation, strictly logical, genetic, functional, and probabilistic. See R. B. Braithwaite, *Scientific Explanation* (Cambridge: Cambridge University Press, 1953), and Ernest Nagel, *The Structure of Science* (New York: Harcourt, Brace and World, 1962). Adherence to these views we consider basic to this paper.

systems covering the earth are studied apart from their relevance to man, even from a spatial point of view, the job is done by people in other disciplines—geologists, meteorologists, and oceanographers, among others. Similarly, bubble chamber work proceeds from a spatial viewpoint at the microlevel, and is undertaken by physicists.

What is this system comprising the earth as the home of man? It can be described as the complex worldwide man-earth ecosystem⁹. An ecosystem logically comprises populations of living organisms and a complex of environmental factors, in which the organisms interact among themselves in many ways, and in which there are reciprocal effects between the environments and the populations¹⁰. Biologists, botanists, and ecologists study such ecosystems from a spatial point of view, of course, but the geographer is the person who concentrates upon the spatial analysis of that worldwide ecosystem of which man is a part. The earth as the home of man is a gigantic ecosystem in which man, with culture, has become the ecological dominant. His earthly environments are thus not simply—and less and less—the physical and biological, but also the cultural of his own creating. The fourth thesis thus becomes: *Geography's integrating concepts and processes concern the worldwide ecosystem of which man is the dominant part.*

There is a further problem which emerges at this point. Definition of the system which geography studies from a spatial point of view is perfectly adequate to differentiate geography's role from that of the physical and biological sciences. Many social sciences study the man-made environments, however: political, economic, social, cultural, psychological, and the like, studied by political scientists, economists, sociologists, anthropologists, and psychologists. We resort to our second thesis. None of these sciences examines the man-made environments from a spatial

⁹ Edward A. Ackerman, "Where is a Research Frontier?" Presidential Address, Denver, Colorado, September 4, 1963, *Annals, Association of American Geographers*, Vol. 53 (1963), pp. 429-440.

¹⁰ Robert P. McIntosh, "Ecosystems, Evolution and Relational Patterns of Living Organisms," *American Scientist*, Vol. 51 (1963), pp. 246-67.

point of view, whether it be to examine spatial dis-

tributions or associations of elements, the organization of phenomena over space, or the integration of diverse phenomena in place. Other distributional and organizational themes are stronger and more central to the other social sciences. Thus, whereas it is the system which is studied which differentiates geography from the physical and biological sciences, in studies of man and his works it is the spatial perspective that differentiates. Within the worldwide ecosystem of which man is the dominant part, man creates for himself many environments. These environments are not studied in their totality by geographers, only in their spatial facets.

DICHOTOMIES WITHIN GEOGRAPHY

Debate about approaches to geographic understanding has traditionally run to dichotomies: natural as opposed to human; topical or systematic versus regional; historical or developmental as contrasted with functional and organizational; qualitative versus quantitative; perks versus pokes. Richard Hartshorne has gone to great lengths to show that many of these dichotomies are either meaningless or useless,¹¹ but the fact that dichotomies have emerged at all suggests that the spatial viewpoint has several facets. In his seminal paper "Geography as Spatial Interaction" Edward Ullman has gone so far as to argue that the essential intellectual contributions of human geography can be summarized in terms of a dichotomy, the dual concepts of site and situation.¹² Site is vertical, referring to local man-land relations, to form and morphology. Situation is horizontal and functional, referring to regional interdependencies and the connections between places, or to what Ullman calls spatial interaction.

Existence of several facets poses problems, even if we agree that, as dichotomies, they are of little utility. Boulding argues that the most significant "crisis in science today arises because of the increasing difficulty of profitable talk among scientists as a whole." Very descriptively, he says that "Specialization

has outrun Trade, communication . . . becomes increasingly difficult, and the Republic of Learning is breaking up into isolated subcultures with only tenuous lines of communication between them. . . . One wonders sometimes if science will not grind to a stop in an assemblage of walled-in hermits, each mumbling to himself in a private language that only he can understand. . . ." Is this to be our fate within geography, with analytically minded economic urbanists off building their fragile models, anthropologically oriented cultural ecologists sequestered in some primitive backwoods contemplating their navels, and the like? As Boulding continues, "the spread of specialized deafness means that someone who ought to know something that someone else knows isn't able to find it out for lack of generalized ears." His solution is "General Systems Theory to develop those generalized

ears ... to enable one specialist to catch relevant communications from others."¹³

A system is an entity consisting of specialized interdependent parts. Most systems can be subdivided into subsystems by searching for modules with high degrees of internal connectivity, and lower degrees of intermodule interaction. If larger modules can be partitioned into smaller modules, it is possible to talk of a hierarchy of systems and subsystems.¹⁴

What we will try to do here is to construct a simple system that depicts the variety of approaches to regional analysis. The traditional dichotomies will be included either as parts of the frame of reference which specifies how the system is separated from the rest of science (the balance of science can be termed the "environment" of the system) or as modules of the system. It is this system that constitutes the synthesis of approaches to regional analysis. The fact that a system has been created emphasizes the unity of the spatial viewpoint. The many facets are not dichotomous or polychotomous, but interdependent; each feeds into and draws upon the others. Moreover, by treating the system so created as one would any other system within the framework of General Systems Theory,

¹¹ Ibid

¹² Edward L. Ullman, "Geography as Spatial Interaction," Proceedings of the Western Committee on Regional and Economic Analysis, David Revzan and Ernest A. Englebert, eds. (Berkeley, 1954), pp. 1-13

¹³ Op. cit., pp. 198-99.

¹⁴ I am indebted to discussions with Alex Orden for clarification of many concepts concerning systems and general systems theories.

poorly developed or new approaches to the geography of large areas may be identified and elaborated. In this way the gift of the “generalized ears” can be used to catch communications from scientists who have forged ahead of us in the development of their particular sets of propositions about the systems they see and study.

A GEOGRAPHIC MATRIX¹⁵

Reflect for a moment on the nature of a single observation recorded from the spatial point of view. Such an observation refers to a single characteristic at a single place or location, and may be termed a “geographic fact.” This geographic fact usually will be

one of a set of observations, either of the same characteristic at a series of places, or of a series of characteristics at the same place. The two series need to be examined more closely. If the characteristic recorded at the series of places varies from place to place, it is common to refer to its spatial variations. These variations may be mapped, for just as the statistician’s series are arranged in frequency distributions, geographers like to arrange theirs in spatial distributions. Study of the resulting spatial patterns displayed in the map is one of the essentials of geography. As for the series of characteristics recorded at the same place, they are the stuff of locational inventories and the geography of particular places. With such inventories it is the geographer’s common practice to study the integration of phenomena in place.

Now assume a whole series of characteristics has been recorded for a whole series of places. Perhaps we can imagine that complete “geographic data files” are available (whether such a dream may really be a nightmare is another topic). An efficient way to arrange the resulting body of data is in a rectangular array, or

¹⁵ This “Geographic Matrix” differs from the matrix-developed for anthropology by Berliner only in that the columns are places for geography and cultures for anthropology. This difference perhaps indicates the kind of variability of major interest to the anthropologist vis-a-vis the geographer, and thus the different perspective in looking at the same systems taken by the two subjects.

matrix. What does this “geographic matrix” look like? Each characteristic accounts for a row, and each place for a column, as in Figure 1. The intersection of any row and column defines a cell, and each cell is filled by a geographic fact, the characteristic

identified in the row, and the place in the column.

At this juncture one might object and say that there is surely an infinity of characteristics and therefore an infinity of possible rows, and at the limit also an infinity of infinitesimal locations on the earth’s surface providing an infinite number of possible columns. This is true; all converges to infinity in the long run. However, to quote Keynes’ well-worn maxim, in the long run we shall all be dead. In practice, for any particular problem in any particular context there is some specification of rows (characteristics) and columns (places) that is meaningful and useful. The present discussion is phrased so as to be applicable whenever there is such a problem, whatever the problem and consequent specification of the rows and columns may be, just so long as the viewpoint is spatial. Given a geographic matrix as described above, how many approaches to regional analysis are possible? One can examine:

- (a) the arrangement of cells within a row or part of a row;
- or (b) the arrangement of cells within a column or part of a column.

The former leads to study of spatial distributions and maps, the latter to the study of localized associations of variables in place, and to locational inventories. Surely we would agree that the two approaches are the bases of all geography.

Next steps might be:

- (c) comparison of pairs or of whole series of rows;
- and (d) comparison of pairs of columns or of whole series of columns.

The former involves studies of spatial covariations, or spatial association. If the columns are complete, running across all characteristics outlined in, Figure 1, the latter implies the study of areal differentiation in its holistic sense.¹⁶

A fifth possibility is:

- (e) the study of a “box” or submatrix (see Fig. 1).

¹⁶ Richard Hartshorne, “On the Concept of Areal Differentiation,” *The Professional Geographer*, Vol. 14 (1962), pp. 10-12.

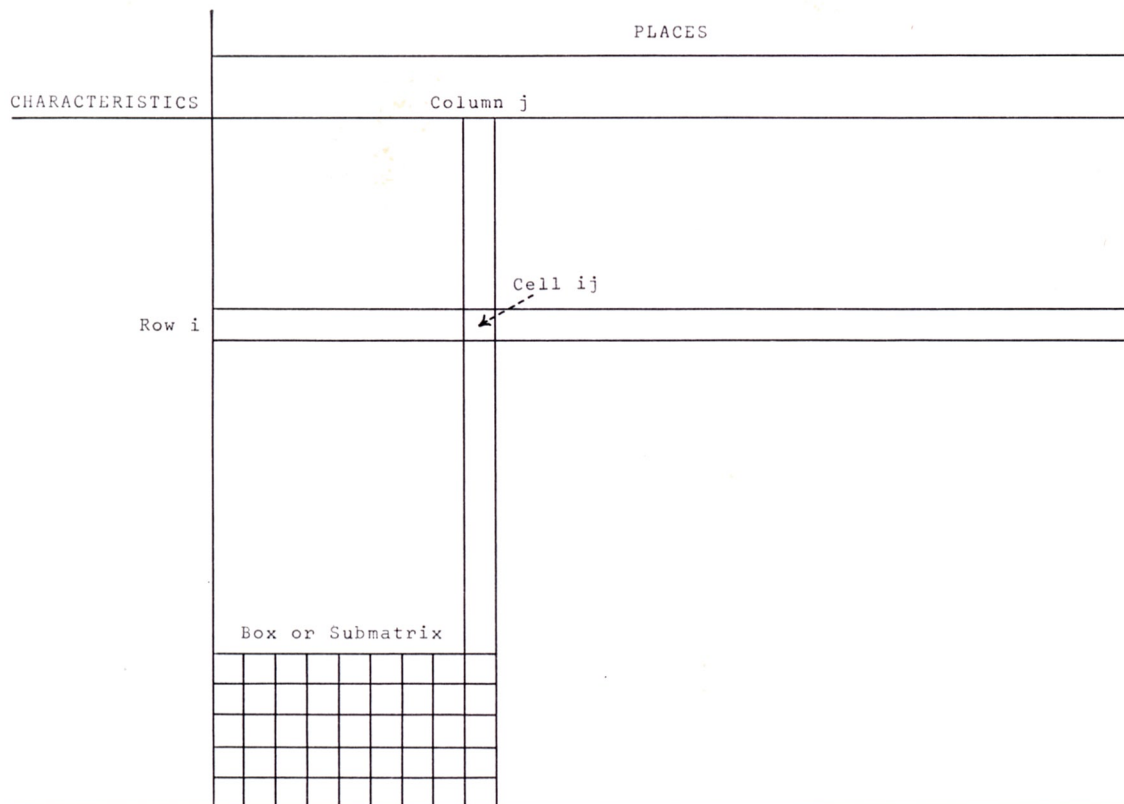


FIG. 1. *The Geographic Matrix*. A row of this matrix presents the place-to-place variation of some characteristic, or a spatial pattern of the variable which can thus be mapped. Each column contains the locational inventory of the many characteristics of some place. Every cell therefore contains a “geographic fact”: the value assumed by some characteristic at some place. Comparison of complete columns is the study of areal differentiation in its holistic sense, and leads to regional geography. Comparison of rows implies the study of spatial covariations and associations, and leads to topical or systematic geography.

It is evident that this kind of study could involve some or all of steps (a)-(d) above, but with something additional—the ability to use findings, say, from studies of spatial association to enrich an understanding of areal differentiation in the partitive sense of the box, or of areal differentiation to explain cases which deviate from some generally expected pattern of spatial association between variables. Each approach could indeed feed into and enrich the other.

A Third Dimension

The definition of a geographic fact presented to this point is deficient in one respect, since a single characteristic observed at a single location must necessarily also be observed at a particular point in time. At any other time it would be different; variation is temporal as well as spatial. Time, too, may be subdivided infinitely, but it is useful to think of the

geographic matrix with a third dimension arranged as in Figure 2 in a series of cross sections or “slices” taken through time in the same manner as rows were drawn through the infinity of characteristics and columns through the infinity of places. Each slice thus summarizes or captures the variations of characteristics from place to place at a certain period of time. Our historical geographers follow this pragmatic procedure. Andrew Clark, for example, noted that “the cross sections which geography cuts through the dimension of time . . . must have a certain thickness or duration, to provide a representative picture of existing situations.”¹⁷

It will be obvious that for any time period, each of the five possible approaches to geographic analysis

¹⁷ Andrew H. Clark, “Praemia Geographiae: The Incidental Rewards of a Professional Career,” *Annals, Association of American Geographers*, Vol. 52 (1962), p. 230, quoting Hartshome.

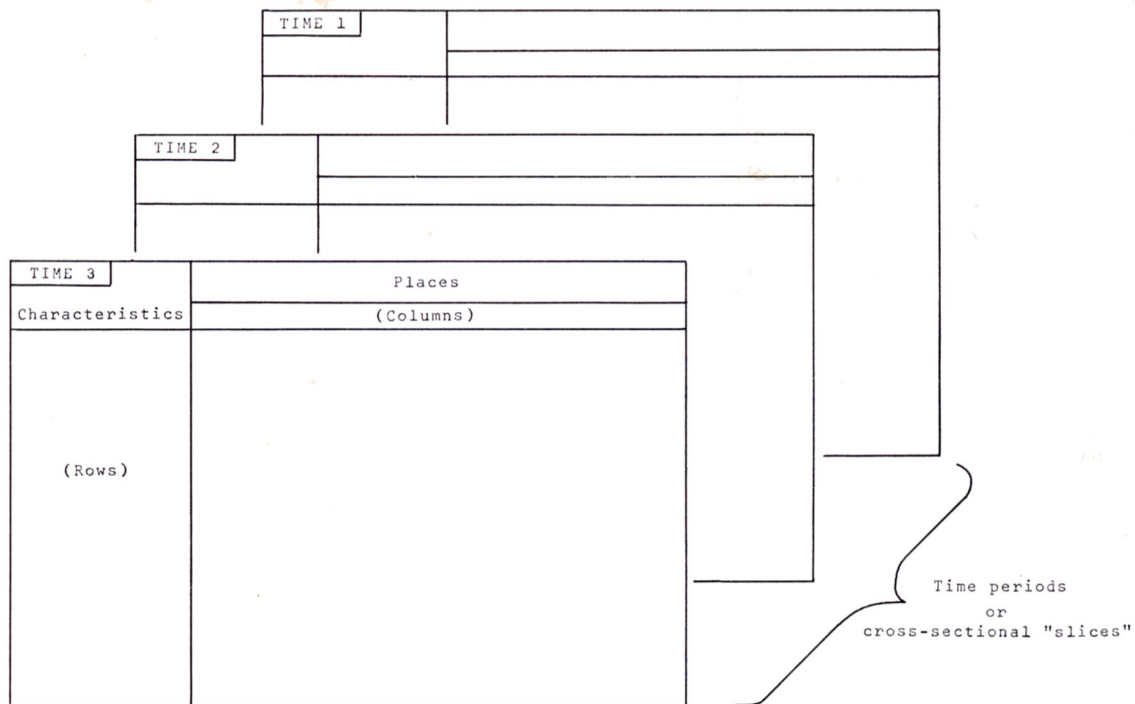


FIG 2 A T?ii.rd Dmien.non. The third dimension, time, may be introduced by arraying a whole series of geographic matrices such as were presented in Figure 1 in their correct temporal sequence. Each time period thus forms a "slice" of the three-dimensional cake, and every slice has all the features described in Figure 1. It will be obvious that such an arrangement makes possible examination of rows through time, of columns through time, and of boxes through time.

previously outlined may be taken. "Geographies of the past" can be studied in this way. Yet there are additional possibilities introduced by the temporal dimension:

(f) comparison of a row or part of a row through time, the study of changing spatial distributions;

(g) comparison of a column or part of a column through time, the study of the changing character of some particular area through a series of stages, otherwise termed the study of sequent occupancy;

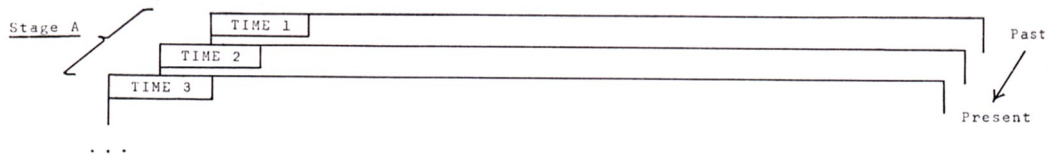
(h) study of changing spatial associations;

(i) study of changing areal differentiation;

and (j) comparison of a submatrix through time, a process that could involve all of the preceding approaches individually, but more properly undertaken requires their interplay.

The Ten Approaches

It is thus possible to conceive of ten modes of geographical analysis which may be applied to further an understanding of geographic data files such as are depicted in Figure 2. These ten modes fall into three series. The first [(a), (c), (f), and (h)] includes studies of the nature of single spatial distributions, of the covariance of different distributions at the same period of time or of the distribution of the same phenomenon at different periods of time, and of the covariance of different distributions through time. A similar series of three levels characterizes the second series [(b), (d), (g), and (i)], which spans locational inventories, studies of areal differentiation and of sequent occupancy, and investigations of changing areal differentiation. The third series [(e) and (j)] involves, at its simplest, the cross-sectional interplay of studies of spatial distributions and associations, locational inventories and areal differentiation, and at its more elaborate level the



Present		MAJOR WORLD REGIONS				
CHARACTERISTICS		Region 1				
		Subregion 1				
		...				
		Place 1				
HUMAN	Population Geography		Variable 1			
	Cultural	Social	Settlement ...			
		Economic	Resources ...			
		Political	...			
	PHYSICAL	Biotic	Vegetation ...			
		Climatic	...			
Geomorphic		Landforms ...				

FIG. 3, Traditional Grouping of Dimensions. Geographers have traditionally grouped variables into an ascending hierarchy of row's, the topical subfields. The broadest distinction is between human and physical geography. Within the former it is possible to isolate that part concerned with culture in its holistic sense, and within culture, the social, economic, and political. Economic is further subdivided into resources, industrial, etc. Industrial itself has been further subdivided, and so forth. Hartshorne also speaks of the study of areal differentiation as leading towards the identification of a hierarchy of world regions, formed by successive grouping of places and smaller regions into larger more general regions. This is to be seen in the arrangement of the columns. Finally, arrangement of the successive shoes into "stages" is the work of the historian. Given this reference framework, it is possible to locate such things as "Changing industrial structure of the English Midlands and the Ruhr during the industrial revolution" with ease, and to ascertain their immediate relevance to other undertakings in geography.

interplay of all nine of the earlier analytic modes.

The most common categorization of variables is into one of geography's classic dichotomies, human and physical. Within the

TRADITIONAL GROUPINGS OF ROWS AND COLUMNS

Figure 3 shows the ways in which geographers have traditionally grouped rows and columns of the matrix, and also the conventional ways of grouping the crosssectional slices, for which we are indebted to historians.¹⁸

¹⁸ In this grouping I relied upon Preston E. James and Clarence F. Jones, eds., *American Geography. Inventory and Prospect*, by Syracuse University Press for the Association of American Geographers, 1954.

human it is conventional to differentiate between variables dealing with collections of people and their numerical and biological characteristics, and those dealing with culture, here used in the holistic sense of the set of man-made variables intervening between man and the earth's surface. These intervening variables may be classified into urban, settlement, transportation, political, economic, and the like. Each of these can be, and has at times been, further subdivided to create further systematic "fields." Economic, for example, is often subdivided into: resources, agricultural, manufacturing, and commercial. These in turn involve further subdivisions, until very limited groups of associated characteristics may be said to define "topical fields." Such is always the pressure of increasing specialization, and, at the extreme, overspecialization.

Clearly, row-wise groupings of variables of interest correspond with the topical or systematic branches of geography. The essence of this kind of geography is thus the first of the three series of modes of geographical analysis. By the same token, groups of columns form regions (most conventionally, such groupings have been based upon countries and continents, or upon physiographic or climatic criteria). Analysis of such groups of columns is regional geography, with its basis the second series of modes of geographical analysis, emphasizing locational inventories and areal differentiation. *If the object of systematic geography is to find those fundamental patterns and associations characterizing a limited range of functionally interrelated variables over a wide range of places, the object of regional geography is to find the essential characteristics of a particular region—its "regional character" based upon the localized associations of variables in place—by examining a wide range of variables over a limited number of places.*

Yet neither a topical specialty nor study of a particular region can be sufficient unto itself. More profound understanding of spatial associations can only come from "comparative systematics" cutting across several topical fields, from an understanding of local variabilities, and from appreciation of the development of patterns through time. Indeed, geography's first, un lamented, theories about man's distribution on the surface of the earth, those of environmental determinism and their wishy-washy derivatives possibilism and probabilism, postulated particular patterns whereby arrangements of

characteristics from place to place in the "human rows" of Figure 3 were determined by arrangements of physical characteristics in the physical rows with, in many respects, the former as a reflected image of the latter. The whole idea of study of man-land relationships is the idea of comparative systematics.

Similarly, "regional character" can only be evaluated in its integrative sense by proper comparative study of regions, the study of areal differentiation. But here we must pause. What is the basis of regional character? Is it the repetitive appearance of a common theme or themes throughout the entire set of variables recorded for the places within the region, which theme or themes differs from those of other regions? If it is, and there is every reason to believe so, then the understanding of regional character presumes an analysis of spatial associations, simplified because it is undertaken for a relatively small number of places, but complicated because it must be defined for many variables. Only by such study can underlying and repetitive themes be identified. Much the same point can be made for topical studies as well. They are regional because they involve the study of a certain number of variables within the confines of a certain set of places. Whether we call a study topical or regional, then, is basically a function of the relative *length* and *breadth* of the portion of the geographic matrix which is studied. Likewise, whether we classify a study as historical geography or not depends upon the *depth* of the portion of the matrix studied relative to its length or breadth, or else the distance of the slice studied from the present.

To extend the argument further, selection of the columns to be studied is not entirely independent of the rows under investigation in American geography today. If a person is studying things in the economic, urban, and transportation rows, it is likely that his studies will also be confined to those columns encompassing "modern" urban-industrial societies. Similarly, if the rows under study involve culture in its partitive sense of cultures, settlement forms, language, religion, ecology, and man-land relations, then it is quite probable that the columns embracing the study will be restricted to proliferate and/or "nonwestern" or "preindustrial" societies. Although there are different modes of analysis, on no account, therefore, can it be said that the several series are undertaken independently of one another, nor should they be.

PERSPECTIVES ON THE ECONOMIC GEOGRAPHY OF THE UNITED STATES

Let us now use this matrix, and later a critique of its inadequacies, to see how well or how thoroughly we have studied the economic geography of the United States.¹⁹ We should first define a submatrix in which the rows embrace those variables of interest to economic geography and the columns encompass all places in the U.S. By projecting the box backwards, we get historical depth. Studies of this box per se have been done very well. The spatial distribution and associations of many variables have been mapped and analyzed. The character of the economic enterprises of most places is well known, as is the historical development of most of the major industries. Attempts of varying degrees of quality have been made to define the relatively homogeneous economic regions of the country both in the partitive sense of agricultural regions, manufacturing regions and the like, and in the holistic sense of real multivariate uniform economic regions. Spatial aspects of the economic growth of the country have been the subject of many investigations.

Yet serious limitations to a general understanding of the economic geography of the country should also be noted. We have already argued that an understanding of the spatial association of any single set of variables requires an evaluation of their actual covariance and theoretical relationship to many other sets of variables, since we are dealing with a system of which interdependence is the essence. Explicit and implicit hypotheses relating to such broader associations are restricted to something which varies between hard-nosed and soft-headed environmentalism. Similarly, more profound understanding of areal differentiation hinges upon comparative regional investigations. This literature is also limited. A third problem is that the model we have developed embraces most of the approaches conceived and undertaken by geographers, but not all; the model itself is limited. There are important geographic questions which the matrix we have developed does not show.

19. The evidence supporting these remarks will be found in Brian J. L. Berry and Thomas D. Hankins, *A Bibliographic Guide to the Economic Regions of the United States*, a study prepared for the Commission on Methods of Economic Regionalization of the International Geographical Union, and published as Research Paper No. 87, Department of Geography Research Series, University of Chicago, 1963.

The discussion was initially phrased in terms of General Systems Theory. This theory tells us what some of these unanswered questions are. Any system, including the “worldwide ecosystem of which man is the dominant part” can be viewed at a variety of levels, the first three of which are those of static structure, connectivity of parts (functional organization), and dynamic processes. Figure 3 shows the ways in which the system of interest to geography may be viewed at the first of these levels, that of static structure—of frameworks and patterns in space and time. It says nothing at all about the second level of interconnections across areas, connectivity of places, flows and interactions, let alone of the third, that of dynamic, interrelated processes. Studies of the economic geography of the United States at the second level are fewer in number and more limited in scope compared with those at the static level, in spite of the early efforts of Platt and the later investigations of Harris and Ullman. The growing central place literature is undoubtedly the best example of the level at which the spatial organization of the U.S. economy is understood. This literature refers to a single sector, the distributive, and is generally confined to the local level of very small urban places. There is no understanding of the spatial organization of the U.S. economy that compares with our understanding of the static patterns, no functional regionalization to match the uniform.

There is no longer any real reason why this gap should exist, in spite of the complexity of the system which has to be clarified. What needs to be grasped is roughly as follows:

1. We live in a specialized society in which there is a progressively greater division of labor and scale of enterprise, accompanied by increasing degrees of regional specialization.
2. But in spite of the increasing diversity of people as producers, as consumers they are becoming more and more alike from one part of the country to another, consuming much the same “basket of goods” wherever they may live, as well as increasingly large baskets because of rising real incomes.
3. The physical problem in the economic system is therefore one of articulation—ensuring that the specialized products of each segment of the country are shipped to final consumers; seeing that consumers in every part of the country receive the basket of goods

and services they demand and are able to purchase; bringing demands and supplies into equality over a period of time,

4. Articulation requires flows of messages, of goods and services, and of funds. The flows appear to be highly structured and channeled, with major metropolitan centers serving as critical articulation points, as follows: products move from their specialized production areas to transshipment or shipping points in the locally dominant metropolitan centers; a complete matrix of intermetropolitan product transfers takes place on a national basis, with each metropolitan center shipping out the specialized products of its hinterland, and collecting the entire range of specialized products from other metropolitan centers spread throughout the country to satisfy the demands of the consumers residing in the area it dominates; distribution then takes place from the metropolis to its hinterland through the medium of wholesale and retail contacts organized in the familiar central place hierarchy. In the reverse direction move both requests for goods and services, and funds to pay for goods and services received, so that the flows are not unidirectional. The foregoing seems simple enough but it is mostly unsupported by substantive studies of the spatial organization of the economy of the United States. Here is a pressing need for careful analysis and synthesis. The amount we do not know at only the second level of viewing the system of interest to geographers is immense, without raising such third-level questions as the ways in which the complex spatial organization of the country is changing through time, and why. The challenge is great, and if these considerations constitute poorly developed or new approaches to the economic geography of the United States, it is towards their solution that we should be moving.