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THE CHARACTER OF REGIONAL GEOGRAPHY

Richard Hartshorne

The American geographer Richard Hartshorne's *The nature of geography*, from which this extract is taken, is the major statement in modern English-language professional geography justifying regional studies as the centre-piece of the field. Hartshorne (1899–1992) based his claim on an interpretation of scholarly writing, particularly that of nineteenth- and early twentieth-century German geographers. The writings of the German geographer Hettner, and precursors such as Kant and Humboldt, figure prominently in *The nature of geography*. From them Hartshorne took the idea that the region was a mental construct for analysis and not a natural or pre-given entity. Originally published in 1939, *The nature of geography* was for many years the major text identifying the essential principles of the field as understood by an unabashed 'regionalist'. This is not to say that it went unchallenged. Far from it. Its author became an important participant in controversy over the direction of the field, especially in his exchanges over the posthumously published article of Schaefer (see chapter 35). Eventually *The nature* came to be regarded more as a 'window for looking into a geographic past' (J. N. Entrikin, Introduction: *The Nature of Geography* in perspective. In J. N. Entrikin and S. D. Brunn, editors, *Reflections on Richard Hartshorne's The Nature of Geography*. Washington, DC, 1989, p. 2) than as a guide to how to combine a sense of the empirical differences between places with a perspective based on the 'objective view' of the scientist. Hartshorne still has his champions and there are those who believe that his views have been lampooned by his critics, but the revival of interest in place and regional geography in the 1980s owed little if anything to the influence of Hartshorne's arguments. Whether Hartshorne's ideas are necessarily antithetical to the new ones is an entirely different question.

[We have silently changed the author's system of referencing, to the Harvard system.]

Source: The character of regional geography. In *The Nature of Geography: a Critical Survey of Current Thought in Light of the Past*. (Association of American Geographers, Washington, DC, 1939), extract from 1961 reprint edition, pp. 436–44.

The development of geography during the past thirty-odd years has been marked by an increasing interest in regional geography. Under the leadership of Vidal in France, of Hettner, Penck, Gradmann, Passarge, and many others in Germany, European geographers gradually shifted away from the concentration on systematic geography, which had been a natural result of the emphasis on universals in all science. Likewise, in this country, the programmatic papers of Barrows (1923) and Sauer (1925), however divergent in other respects, agreed in the emphasis on regional studies as the core of geography. Though Pfeifer (1938) is correct in noting the similarity of these, the two most influential methodological statements in current American geography, he over-estimates their importance in determining the course of current thought in American geography by failing to note the major degree to which, like the earlier methodological pronouncements of the presidents of this association, they simply "mirror . . . geographic opinion in America" [94]. As Platt has pointed out, the roots of the current movement, in particular of the tendency for detailed studies of small areas, reach back to geological field courses before the World War and military mapping during the War.¹⁰⁵ It is neither possible nor necessary to determine even approximately what forces or what individuals have been responsible for this development. Mention should certainly be made of the influence that Bowman (1934), as Director of the American Geographical Society, exerted towards intensive regional studies. Possibly most important of all has been the personal influence exerted by the group of Midwestern geographers whose annual field conferences, in the years 1923 and following, concentrated the attention of a much larger number of workers on the problems of regional mapping [note, for example, the report of the joint conclusions of this group (see the bibliography for its members), which Jones and Finch published in 1925, as well as the significant studies of Finch (1933, 1934), Hall (1935), Jones (1930, 1934a, 1934b), Whitaker (1932), Whittlesey (1929, 1935a, 1935b), James (1934)].

If geography, in America as well as in Europe, may be said to have returned, in a certain sense, to the point of view that was common with Humboldt and Ritter (see Sec. II D), its long period of concentration on systematic studies has enabled it to return far better equipped with generic concepts and principles with which to interpret the findings of regional geography – though unfortunately this equipment is relatively deficient in respect to human or cultural features, both in geographic literature and in the training of most of its students.

Many geographers who have accepted this shift in emphasis evidently have done so under the provisional assumption that regional geography is to be made as "scientific" as systematic geography has been, that somehow it must be raised to the plane on which scientific principles may be constructed. We have noted a

¹⁰⁵ In a paper read before the association at the recent meetings, 1938. Specifically Platt notes that the first publication cited by Pfeifer as containing "proposals made by Sauer" [footnote 12] actually consisted of proposals, presented without distinction of authorship, of both its co-authors (as well as of other unnamed members of a seminar group at the University of Chicago): W. D. Jones and C. O. Sauer: "Outlines of Field Work in Geography," *BULL. AM. GEOGR. SOC.*, 47 (1915), 520–5.

number of difficulties into which this ambition has led. In our final consideration of regional geography it is necessary to understand clearly certain limitations imposed upon the student that are not found in systematic geography.

After a number of unsuccessful attempts to express the special nature of regional study in words, I find it can be most clearly presented if we may use mathematical symbols, though we shall not, of course, find it possible to express such complicated problems in any real mathematical formulae or equations.

Any particular geographic feature, z , varying throughout a region, might theoretically be represented as a function, $f(x, y)$, x and y representing co-ordinates of location. As a function of two variables, any such feature that we are able to measure mathematically – such as slope, rainfall, or crop yield – can be represented concretely by an irregular surface. Such a surface would then present the actual character of that feature for the whole region; it would, theoretically, be correct for every point, and for every small district. Furthermore, if the function involved were not too complicated, the theory of integral calculus would permit us to integrate the total of that feature for any limited section, as well as for any individual point. In a sense, part of our work in systematic geography corresponds to this form of presentation.

Likewise, the relation of any two or three geographic factors to each other within a region – e.g., the relation of crop yield to rainfall and humus content of soil – might be represented as a functional equation involving that many variables: $z_3 = f'(z_1, z_2)$. The concrete representation of this relation would require again a surface form. More commonly, in systematic geography, we consider only the relation of one factor to but one other, which we may then represent as a curve on a plane surface. Each of these factors, z , is of course a different function, $f(x, y)$, and the more complex equation, $z_3 = f'(z_1, z_2)$ holds true only if z_3 is unaffected by other z factors, or if those which affect it are constant throughout the region under consideration. Neither of these conditions is strictly true: almost any geographic element we may consider is affected by more than two of the natural elements, and may also be affected by incommensurable, or quite unknown, human factors; and all of the factors considered vary to some extent no matter how small the area considered. Consequently, we have introduced a degree of distortion of reality even at this step in systematic geography.

We may introduce a further step by establishing element-complexes, u , each representing functions of many z elements, varying, by more or less regular rules, with the variations in a smaller number of those elements. Thus, given certain conditions of soil, slope, temperature, and rainfall we may presume within a wide margin of both inaccuracy and uncertainty, certain conditions of natural vegetation and wild animal life, and we may express the total of all these z elements by one u element-complex. If it were conceivable that we could express this feature, u , arithmetically, its character over an area would likewise form an irregular surface that would indicate its character for any limited part. From the nature of these element-complexes, however, it is obvious that any such representation would have a high degree of unreliability.

In regional geography, however, we are concerned with a vastly more

complicated function of the location co-ordinates. It cannot be expressed as the function of any one element or element-complex, but rather of various semi-independent element-complexes, u , and of additional semi-independent elements, z' . Thus, the total geography, w , at any point, might be expressed by the function, $F(u_1, u_2 \dots u_n, z'_1 \dots z'_n)$. If we could have accurate and complete information concerning the form of the function, F , and every one of the element-complexes, u – each as a function of various z elements – and of the semi-independent elements z' , the function would be so complicated that we could not hope to represent it by any concrete form, even in terms of n -dimensional space. We would have a function that could be solved only for each point, x, y , in the region, but could not be correctly expressed for any small part larger than a point. In other words, we could study the geography of the area only from the study of the geography of the infinite number of points within it. This task, being infinite, is impossible. The problem of regional geography, as distinct from a geography of points, is how to study and present the geography of finite areas, within each of which the total complex function involved depends on so many complex functions, complexly inter-related, as to permit of no solution by any theory of integration.

Consequently we are forced to consider, not the infinite number of points at each of which w is in some degree different, but a finite number of small, but finite, areal divisions of the region, within each of which we must assume that all the factors are constant. In order, then, to cover an entire region we will need but a finite number of resultants, w , each representing the geography of a small unit of area rather than of a point. This method is legitimate only if one remembers that it inevitably distorts reality. The distortion can be diminished by taking ever smaller unit areas, but it cannot be eliminated entirely; no matter how small the unit, we know that the factors which we assume to be constant within it are in fact variable. In practice, the smallest units that we can commonly take time to consider are sufficiently large to permit of a marked degree of variation, and therefore of a significant distortion of reality in our results.

To express our conclusion in more common terms, in any finite area, however small, the geographer is faced with an interrelated complex of factors, including many semi-independent factors, all of which vary from point to point in the area with variations only partially dependent on each other. He cannot integrate these together except by arbitrarily ignoring variations within small units of area, i.e., by assuming uniform conditions throughout each small, but finite unit. He may then hope to comprehend, by analysis and synthesis, the interrelated phenomena within each particular unit area.

Although the studies of all the unit areas added together will constitute an examination of the entire region, this does not complete the regional study. As Penck has emphasized, it is not sufficient to study individual "chores" (approximately homogeneous districts) and to establish types of chores. "Above all geography must consider the manner in which these are fitted together to form larger units, just as the chemist does not limit himself merely to studying the atoms, but investigates also the manner of their situation beside each other in individual combinations. The comprehension of geographic forms (*Gestalten*) has scarcely

been taken into consideration by the new geography." Just as a mosaic cannot be comprehended, Penck (1926) continues, by classifying and studying the individual stones of which it is made, but requires also that we see the arrangement and grouping of the individual pieces, so the study of the arrangement of the "chores"¹⁰⁶ will present different structural forms of significance [in part also in his address given in Philadelphia and published in English, (1927) 640].

Our second step – in a theoretical approach to regional geography – is to relate the unit areas to each other to discover the structural and functional formation of the larger region. Since all the factors concerned, and therefore the resultants, have been made arbitrarily constant for each small unit, it may be permissible to speak of functional relations between one factor in one unit and another in another unit, as though these were functional relations between the units themselves – provided that we understand that this is not strictly true. Further, the regional structure produced by this method will have the character of a mosaic of individual pieces, each of which is homogeneous throughout, many of them so nearly alike that in any actual method of presentation they will appear as repetitions in different parts of the region. But we are not to be deceived into regarding this mosaic which we have made as a correct reproduction of reality. It is simply the device by which finite minds can comprehend the infinitely variable function of many semi-independent variable factors. The fiction involved is threefold: we have arbitrarily assumed each small unit area to be uniform throughout; we have delimited it from its neighbours arbitrarily, as a distinct unit (individual); and we have arbitrarily called very similar units identical in character.

There are certain other fundamental limitations that must be insisted upon if we are to compare the face of the earth, even in the more or less distorted form in which the geographer must present it, to a mosaic. We may say that there is a similarity in the detail of technique but, unless we are to return to some teleological principle, we cannot liken the face of the earth to any work of art, for we cannot assume that it is the organized product of a single mind. On the contrary, if we may transfer Hettner's analogy of a building built by several architects working independently to Huntington's picture of "The Terrestrial Canvas," we may say that the face of the earth has been produced by the interrelated combination of different color designs each applied by different artists working more or less independently, and each changing his plan as he proceeded. In systematic geography one might say,

¹⁰⁶ This is the word that Sölch (1924) introduced as a term for a unit area. As he defined it the concept is independent of size; the chore is simply an area of land determined by the relative degree of homogeneity of all geographical factors – "geo-factors." A chore established on any particular scale could be divided into smaller chores each of which would presumably show a higher degree of homogeneity; the limit of such a process is, of course, the perfectly homogeneous unit, which can only be a point. In adopting this term Penck has used it in a different meaning, according to which the "chores" appear as the smallest land units, indivisible cells, so to speak, which he adds up to form larger "forms." We do not follow this usage, not only because it changes the meaning of the term as the inventor defined it, but also because there can be no smallest land units. As Penck himself elsewhere has recognized, we may continue the process of division indefinitely and our subdivisions are no less (and no more) real units than those we divided.

we attempt to separate each of the individual designs in order to understand its form and its relation to the others and, thereby, to the total picture. Since the total pictures were not produced simply by superimposing different color plates in printing, but are, to some extent, causally related to each other, this separation involves the analysis of the causal and functional relations of each design to the others. In regional geography we first reduce the subtle gradations which the different artists of nature have applied and intermixed on the face of the earth, to the stiff and arbitrary form of the mosaic technique. When we then survey the formation of the mosaic pieces, we are not to expect some unified organized pattern such as every work of art must have. On the other hand, neither need we expect mere chaos, or a kaleidoscope; for we know, from our studies in systematic geography, that there were principles involved in the individual designs, and if our determination of the unit areas of homogeneity has not been purely arbitrary, but has been based on the combination of careful measurement and good judgement, we may expect the combinations of these designs to show more or less orderly, though complex patterns. Further, whatever the explanation of these patterns may be, their form is significant to each of the parts, since the development in each unit part is affected by that in the others.

The last thought leads us finally to another major respect in which any analogy of the earth surface to a work of art is inadequate, namely, the fact that, while the latter is static, consisting of motionless forms, the face of the earth includes moving objects that are constantly connecting its various parts. (To attempt to introduce the artist's special use of such terms as "lines of force," "movement," "opposite forces," etc., would merely add to confusion here.) In other words, the geographer must consider function as well as form. In establishing our arbitrary small unit areas we not only assume that each is uniform throughout in character, but also in function. Likewise, in combining these units into larger regional divisions our problem is complicated by the fact that we must consider the functional relations of the units to one another as well as their form. For example, if two neighboring areal units are so similar that we have painted them as much alike as two pieces of mosaic of the same color, but one of them is functionally related to a city center in one region, the other to a city center in another, are we to include them in the different regions, or, if in the same region, in which? Any answer to this question can only be more or less intelligent: there can be no one "correct answer."

Just as it is necessary to know the arrangement of units areas in a region, it is likewise necessary to understand the arrangement of regions to each other. Both Penck and Granö (who follows a similar line of thought (1929) 28–31) would carry the process on to larger units; the size of the areas concerned is immaterial. Regional geography, therefore, studies the manner in which districts are grouped and connected in larger areas, the manner in which these larger areas are related in areas of greater scale, and so on, until one reaches the final unit, the only real unit area, the world.

There is, however, one important difference at the different levels of integration. Both Penck and Granö appear to ignore the fact that the small, but fundamental, element of fiction in the assumption of homogeneity of the smallest units of area

increases progressively as one advances to larger divisions. Consequently, the determination of these larger divisions requires increasingly arbitrary distortions of fact.

Assuming the first step, the establishment of "homogeneous units" of area, we may proceed to the second by enclosing in a continuous area which we call a region, the greatest possible number of "homogeneous units" that we judge to be nearly similar, together with the smallest number of dissimilar units. Our judgment of similarity will involve subjective judgment as to which characteristics of the homogeneous units are of greater importance than others, so that, at best, the determination of the region is in a sense arbitrary.

Furthermore we seldom find in reality such a simple solution as that described. Though some geographic features vary but gradually from place to place, the irregular and steep variations of others – such as soils, slopes in mountainous areas, urban settlement, and all the features of essentially linear form, rivers, roads, and railroads – will force us to include in any region, "units" of quite different character. It is necessary therefore to determine which kinds of units are, either in actual interrelation or merely in juxtaposition, characteristic of the region as approximately considered, and then so determine it as to include the greatest number of those several kinds of similar units, with the smallest number of units of other kinds.

In considering any large area in which we have first recognized "homogeneous units" and are attempting to form them into regions, which we can briefly characterize in terms of similarities or relations among some of those units, we may find the task relatively simple in parts of the area, where perhaps the great majority of the units are notably similar. But it may be extremely difficult in parts between these, which may be characterized by units that are, in some respects, similar to units on one side of them, in other respects, to units on another side. Further, we will find areas containing such a variety of different kinds of units that we cannot see where to include them. In some cases, to be sure, we may recognize such areas as transition zones, but that merely postpones the fundamental problem without solving it. Likewise, to call them "characterless areas," or areas of "general" or "mixed" types is simply to dodge the problem entirely.

The individual student, no doubt, would gladly wipe such troublesome areas off the map, but he is not granted that privilege. Neither is a science which seeks to know what the world is like permitted to ignore more difficult areas and confine itself to those easier to organize into its body of knowledge. Since these doubtful areas are commonly not merely narrow borders of transition, but areas of wide extent, perhaps as great or greater than those more clearly classified, there is no basis for assuming that they are of less importance in the total picture of the larger area, or of the world, than the areas whose character we can more readily describe. Fenneman's statement with reference to the different parts of geography applies even more literally to parts of an area – "there is no more inherent worth in a center than in a border."

Consequently, when we divide any given area into parts which we call regions, so determined that those characteristics that we have judged to be most important

may be most economically stated for each region, we cannot avoid many decisions based on judgment rather than on measurement. We must, therefore, acknowledge that our regions are merely "fragments of land" whose determination involves a considerable degree of arbitrary judgment. On the other hand, if all possible objective measures have been used, and the arbitrary decisions are based on the student's best judgment, we may properly regard his regions as having more validity than is expressed by the bare phrase "arbitrarily selected." On the other hand, the view of various writers previously noted, that geographers could be expected to come to approximate agreement on the specific limits of regions – or even on their central cores – appears, in view of all the difficulties listed, overly optimistic.

It hardly needs to be added that the conclusion that geography cannot establish any precise objective basis for regional division does not permit it to shirk the task of organizing regional knowledge into areal divisions determined by the best judgment possible. In order to utilize the generic concepts and principles developed in systematic geography to interpret the finding of regional geography, the latter must be organized into parts that are as significant as is possible. In the present state of development of the field – if not indefinitely – we do not have what would be the simplest solution, namely, a single standardized and universally accepted division and subdivision of the world into regions. Therefore, each student of regional geography has imposed upon him the task of standardizing his own system of regional division – unless he can utilize that of some colleague. "Standardized" is used here to indicate that the regional system is based on certain standards specifically stated, so that other students may know precisely what the organization is.

The complete organization of regional knowledge in geography requires – whether as a final or as a primary step – the division of the whole world. In whichever direction the process is carried on – and we noted that it requires consideration in both directions – the completed system must provide a regional division of the world in which our knowledge of each small part may be logically placed. For this extremely difficult problem we found two different methods of solution. Geographical knowledge may be logically arranged in systems of areas classified according to certain characteristics of the areas. Though this method has distinct utility for comparative purposes, it does not permit organizing all regional knowledge into one system, but requires several independent systems. Furthermore, it does not present the actual relations of areas as parts of larger areas. These relations can be included only in a realistic division of the world into a system of specific regions, in which all regional knowledge may be incorporated in a single logical system. Such a system unfortunately is not provided the geographer by any natural division present in reality, nor by anything corresponding to the simple division of organic forms. It must be developed and constantly modified by geographers as a result of research, at the same time that it is being used, always in tentative form, as the organizing structure of regional research.

We have suggested, in very general terms, the manner in which the problem of delimiting regions may be met, in order that geographic knowledge may be

organized intelligently in regional units. What kind of knowledge is to be included within the regional study itself? So far as the nature of the material is concerned, we have previously indicated that a complete geography of a region includes all the kinds of phenomena that are included in systematic geography – insofar as they may be present in the particular region. The only field of geography that is not included in regional geography, as well as in systematic geography, is historical geography. As there was a different geography in every past period, there may be any number of independent historical geographies, each including its own systematic and regional divisions.

References

- H.H. Barrows, 1923: Geography as human ecology, *Annals of the Association of American Geographers* 13, 1–14.
- I. Bowman, 1934: *Geography in Relation to the Social Sciences*. New York.
- V.C. Finch, 1933: Montfort, a study in landscape types in southwestern Wisconsin. *Geographical Society of Chicago, Bulletin* 9.
- 1934a: Conventionalizing geographic investigation and presentation; a symposium, *Annals of the Association of American Geographers* 24, 77–122.
- 1934b: Written structures for presenting the geography of regions, *Annals of the Association of American Geographers* 24, 113–20.
- J. G. Granö, 1929: Reine Geographie: eine methodologische Studie beleuchtet mit Beispielen aus Finnland und Estland, *Acta Geographica*, 2, No. 2 (Helsinki). Review by H. Hassinger, *Geogr. Ztschr.* 36 (1930), 293–6.
- R. B. Hall, 1935: The geographic region: a resumé, *Annals of the Association of American Geographers* 25, 122–36.
- P. E. James, 1934: The terminology of regional description, *Annals of the Association of American Geographers* 24, 77–86.
- W. D. Jones, 1930: Ratios and isopleth maps in regional investigation, *Annals of the Association of American Geographers* 20, 177–95.
- 1934: Procedures in investigating human occupancy of a region, *Annals of the Association of American Geographers* 24, 93–107.
- and V. C. Finch, 1925: Detailed field mapping in the study of the economic geography of an agricultural area, *Annals of the Association of American Geographers* 15, 148–57.
- A. Penck, 1926: Geographie und Geschichte, *Neue Jahrbücher f. Wissench. u. Jugendbildg.* 2, 47–54. Abstract in *Ztschr. f. Ges. f. Erdk.*, Berlin, 60 (1925), 384.
- 1927: Geography among the Earth's Sciences, *Proceedings American Philosophical Society* 66, 621–44.
- G. Pfeifer, 1938: Entwicklungstendenzen in Theorie und Methode der regionalen Geographie in den Vereinigten Staaten, nach dem Kriege, *Ztsch. d. Ges. f. Erdk.*, Berlin, 93–125. Abstract by J. Leighley, *Geographical Review* 28, (1938), 679.
- C. O. Sauer, 1926: The morphology of landscape, *University of California Publications in Geography* 2, 19–53.
- J. Sölch, 1924: *Die Auffassung der "natürlichen Grenzen" in der Wissenschaftlichen Geographie*. Innsbruck. Review by R. Sieger, *Peterm. Mitt.* 71 (1925), 57–9.
- R. Whitaker, 1932: Regional interdependence, *Journal of Geography* 31, 164.

- D. Whittlesey, 1929: Sequent occupancy, *Annals of the Association of American Geographers* 19, 162–65.
- 1935a: The impress of effective central authority upon the landscape, *Annals of the American Association of Geographers* 34, 85–97.
- 1935b: A conference on regions, *Annals of the Association of American Geographers* 25, 121–74.