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The concept of urbanism Five Models examined, criticized

“Urbanism” is one of the most protean of terms. In one or other of its inflections¹ it is customarily used to denote sets of qualities possessed by certain of the larger and more compact clusters of settlement features that at any particular moment in time represent centroids of continuous population movements². It is also often held that these larger nodes in the settlement pattern are theatres for the acting out of a distinctive manner of life characterized as “urban”. It is known that nodes of this order of dominance first appeared in the settlement hierarchy some five thousand years ago in the course of the transformation of relatively egalitarian, ascriptive, kin-structured groups into socially stratified, politically organized, territorially based societies³, since when they have progressively extended the scope and autonomy of their institutional spheres so that today they mould the actions and aspirations of vastly the larger proportion of mankind.

During the five millennia of their existence these clusters of institutions have taken a great variety of forms which differ widely both among themselves and from most present-day urban settlements. Indeed, as far as morphology is concerned ancient and modern cities share only traits of so general a character that they are virtually useless for classificatory or analytical purposes. There is, in fact, no *a priori* reason to suppose that all the multifarious groupings of population both past and present that are and have been conventionally designated as “urban” should necessarily be subsumable within a single logically coherent field⁴, but if structural regularities are ultimately elucidated, then it is practically certain that they will be manifested in shared functions and in trends in systemic change rather than in form.

In any case, it is not particularly profitable for a social scientist to attempt to discuss the nature, the essential quality, of urbanism. That is a metaphysical question more amenable to philosophical enquiry than to the empirical methods of the social sciences⁵. In this paper I shall therefore adopt a point of view that Karl Popper would categorize as “nominalist”, and attempt to answer the questions, “When we use (or have used) the term ‘urban’, what do we mean (or have we meant)?” and “How do those aggregations of functionally interrelated institutions that we call (or have called) a city

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(or a town or an urban form) behave? What is their function?" The question "What is urbanism?" is one that I shall leave to Popper's "methodological essentialists"⁶.

Attempts to classify urban forms and functions have inevitably, and I believe properly, reflected the interests of the classifiers. In classifying in the interests, as it were, of different interests, by emphasizing the aspects of urban life that they individually have considered significant, scholars have sought to introduce order into the immense (though often still poorly documented) variety of urban forms that have emerged during the past five thousand years. There have been, I think, five conceptually distinct, though in practice substantially overlapping, approaches to the investigation of these forms, namely (1) reliance on ideal-type constructs, (2) formulation of ecological theories, (3) delineation of trait complexes (4) conceptualization of the city as a centre of dominance, and (5) an expedient approach usually based on the size of the urban population. In what follows I propose to discuss some of the more important and representative examples of these approaches.

Ideal-type constructs: folk-urban and rural-urban dichotomies

Ideal-type constructs have been invoked most frequently in attempts to discriminate urban society in its totality from pre- or non-urban (folk⁷) society. The germ of this conceptualization is very ancient. In the early literature of the western Semites, for example, moral valuations were attached to very clear perceptions of the differing life-styles of the urbanized Canaanites and certain nomadic Hebrew tribes⁸. For Lucretius and the Epicureans much the same distinction was subsumed by the paired terms *concordia* and *justitia*, for Mencius by court (*ch'ao t'ing*) and village (*hsiang tang*)⁹. During the nineteenth century several pioneers in the development of the social sciences gave formal expression to these distinctions. Sir Henry Maine, for instance, distinguished between kin-based social organizations in which position was ascribed through "Status", and territorially-based societies in which position derived from "Contract"¹⁰. Morgan symbolized this distinction between an intimate and traditional mode of village association and a formal and contractual type of urban association under the terms *Societas* and *Civitas*¹¹, Tönnies as *Gemeinschaft* and *Gesellschaft*¹², and Weber as "Traditional" and "Rational"¹³. Other scholars have from time to time proposed similar dichotomous constructs¹⁴, but the most influential, so far as urban theory is concerned, has probably been Durkheim's distinction between societies of mechanical and organic solidarity¹⁵, between societies integrated through a sharing of sentiments and those integrated through a complementarity of functions. These polar types were based predominantly on societal characteristics. Couched in formal morphological terms, they took

little account of the roles assumed by exchange in different societies. Marcel Mauss, Durkheim's pupil and subsequently his collaborator, extended the theory to explain how exchange functioned as the cement binding functionally differentiated societal parts into organic wholes¹⁸, but it was Robert Redfield and Milton Singer who, in 1954, formulated a typology of urban forms that took cognizance of the changing place occupied by modes of economic integration in society as a whole. At one pole of their classification were those cities in which economic institutions were subordinated to the religious and moral norms of society, and which were mostly administrative and political foci diffusing traditional culture. At the other end of the spectrum were those cities in which the market system was autonomous and self-regulating, cities of the entrepreneur where the values of society were structured about expediential norms that manifested themselves in a consensus appropriate to the technical, rather than the moral, order. In the first type of city change was mediated by literati according to the mores of a classical tradition, and was consequently felt to be an inevitable outgrowth of the past, whereas in the second type of city change was generated by conflict and dissent, cultures disintegrated, and an intelligentsia propagated heterodoxies that not infrequently assumed the complexion of heresy. Rootlessness and anomie were prevalent in such cities and, as new cultural integrations were forged, there developed marked and often painful discontinuities between past and future. On the basis of the manner in which these two types of city mediated change Redfield and Singer classified them as cities of, respectively, orthogenetic and heterogenetic transformation.

The folk-urban ideal-type dichotomy was relatively easily devised for it opposed two markedly distinct levels of socio-cultural integration. The usefulness of such constructs was sometimes questioned, but there was usually a fair degree of consensus as to the qualities by which they were categorized. Adequately to discriminate component entities *within* an urbanized society, to formulate a rural-urban ideal-type dichotomy, however, was a rather more subtle exercise. It is true that the two forms of settlement are still readily apparent in patterns of land utilization, but their relevance to the ordering of society, particularly the highly complex industrial societies of the modern world, has been—and indeed still is—a matter for debate. It is in some ways anomalous that the most widely cited attempt to devise such a construct is associated with the name of Robert Redfield, for the urban component of Redfield's model was defined only implicitly. His main interests, deriving from his researches in Middle America, were with what he called "folk" and "peasant" societies, by which he meant respectively pre- or non-urban groups and the rural component in an urbanized society. The former he described as:

small, isolated, non-literate, and homogeneous, with a strong sense of group solidarity. The ways of living are conventionalized into that coherent

system which we call "a culture". Behaviour is traditional, spontaneous, uncritical, and personal; there is no legislation or habit of experiment and reflection for intellectual ends. Kinship, its relationships and institutions, are the type categories of experience and the familial group is the unit of action. The sacred prevails over the secular; the economy is one of status rather than of the market¹⁸.

Urban life was conceived as being virtually the opposite of this polar construct, and Redfield did not pursue the matter significantly farther except to define the peasant as an urbanized countryman.

There were no peasants before the first cities. And those surviving primitive peoples who do not live in terms of the city are not peasants . . . he [the peasant] is long used to the existence of the city, and its ways are, in altered form, part of his ways. The peasant is a rural native whose long established order of life takes important account of the city.

. . . Peasantry then, whether Mexican or Chinese or Polish, is that style of life which prevailed outside of the cities and yet within their influence during the long period between the urban revolution and the industrial revolution¹⁹.

In his later work Redfield went further and envisaged city-dweller and peasant as elements in a continuum²⁰. Clearly the assemblages of traits by which he characterized these complementary components of urbanized society were high-level abstractions designed as heuristic aids in the discrimination of broad stages or types in a spectrum of societal evolution. Subsequently, however, these constructs sometimes came to be regarded, despite Redfield's protestations, as generalizations derived from empirical investigations, as the results of research rather than as tools with which to undertake it. For instance, we find Queen and Carpenter writing that "there is a continuous gradation in the United States from rural to urban rather than a simple rural-urban dichotomy and . . . as human communities are arrayed along this rural-urban continuum, consistent variations occur in patterns of behaviour"²¹.

Criticisms of the concepts of a rural-urban dichotomy and a rural-urban continuum have been based on four main grounds: (i) that both parts of the dichotomies "represent confounded variables and, in fact, complex systems of variables which have yet to be unscrambled"; (ii) that they fail to recognize the co-existence of both urban and folk or peasant-like characteristics in numerous empirical situations²²; (iii) that they are incapable of accommodating the presence of certain types of communities which are commonly found to exist in both societies. In particular they fail to take sufficient account of the wide range of levels and types of societies that exist in association with urban forms²³; (iv) that the hypotheses are structurally unable to incorporate the discontinuities that are observed to exist in both rural and urban contexts. In fact, the so-called "theories of contrast"²⁴ are of so general a nature that

they can be of little analytical use in the study of processes of change, while they are often too inaccurate to be reliable guides in the study of societies in equilibrium²⁵. However, although their heuristic value as research tools has never been proven²⁶, although the relationship between the various characteristics of populations ordered by settlement size is seldom linear, and although the formulations probably tend to confuse rather than illuminate issues in the investigation of short-term change, nevertheless, in principle the constructs may still have some utility in discriminating gross categories of social development. What is necessary to render them viable is, as Hauser has specified, the devising of "well-designed empirical researches in which deviations from the constructs are noted in greater detail and with greater precision than are now available. Such research would better illuminate the nature of diverse social orders and, in the process, perhaps lead to the construction of an ideal typology more useful than that which is now available as prolegomena [*sic*] to empirically based generalizations"²⁷.

The relationship between urbanism and urbanization on the one hand and economic development on the other has evoked a good deal of discussion, particularly among students of the "modernization" process²⁸. The popular belief that development of cities is a necessary condition of economic growth would seem to be supported by the fact that almost invariably there is a higher density of high-order central places (defined in the next section) in countries with higher incomes than in countries with lower incomes, and that, generally speaking, the population of higher-order central places constitutes a larger proportion of the total population in countries with higher incomes than in countries with lower incomes. Moreover, the high degree of specialization of labour and management involved in self-sustaining growth is often held to be attainable only in a relatively highly urbanized society²⁹, and it is similarly claimed that the universalist, achievement-oriented values that are a prerequisite for rationalization of production, and hence for industrialization, flourish best in an urban milieu³⁰. However, Hoselitz has pointed out that, even if the preceding propositions are generally true, there are numerous examples of cities which impede economic growth, and he has proposed the ideal-type constructs of the generative and the parasitic city. A city is generative 'if its impact on economic growth is favourable, i.e., if its formation and continued existence and growth is [*sic*] one of the factors accountable for the economic development of the region or country in which it is located". A city is considered parasitic if it exerts an opposite impact³¹. The model has recently been tested in two African contexts by Barber (Rhodesia and Zambia)³² and Mabogunje (Nigeria)³³, with the latter author paying particular attention to the time element inherent in the construct³⁴.

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Ecological theories of urban development

The ecological approach has come closer than any other to providing a systematic theory of urbanism. It took its inception towards the end of the nineteenth century in the works of sociologists, social workers and philosophers who opposed both the romantic notion of the "unnaturalness" of the city and certain theories holding that it functioned literally as an organism or a person³⁵, but the bench mark from which it really developed was Park's paper on "The city: suggestions for the investigation of human behaviour in the urban environment" in 1916³⁶. In endeavouring to specify a set of basic patterns and postulates according to which people and institutions were distributed within the city, Park and his students at the University of Chicago drew upon the principles of plant and animal ecology.

Hence, the human ecologist defined the city primarily as a natural environment. Within it he expected to study the effects of ecological forces and processes. Within it, he assumed, people and their social institutions would be interdependent. The city, in other words, was seen as an ecological unit in which patterns and processes could be discerned by the same techniques and from the same perspective as those in nature³⁷.

Perhaps the best known formulations of members of the school of urban ecology were their descriptive models of the internal structure of cities, some of which are mentioned on page 607 below. Although they underwent continual modification, these models never managed entirely to accommodate the trenchant criticisms that were levelled at them, notably by Firey, who pointed out that the ecologists' investigation of land utilization patterns as the consequences of subcultural and unplanned processes was not only untrue to reality but also distorted the effects of culture and generally non-economic motivation. In his famous study of Boston, for example, Firey demonstrated that urban land was developed largely in accordance with cultural demands set by community sentiments and symbols³⁸. In other words he castigated the ecologists for over-simplifying their problems by the exclusion of complex cultural variables.

In the face of these criticisms, urban ecologists tended to reduce the scope of their theoretical formulations, and concentrated their studies on such limited empirical investigations as the incidence of various forms of maladjustment, migration, mobility and so forth. Ultimately Park himself came to deny that he was attempting to devise a theory at all³⁹. Subsequently a school of what has been called Neo-ecology arose, principally under the stimulus of Amos Hawley's book *Human Ecology*, published in 1950. For Hawley the task of the ecologist was to describe the characteristics of the population aggregate, to analyze both the community structure through which it functioned and the tendencies within the structure inducing differentiation and specialization,

and to discern the effects of internal and external changes on the organization of the human aggregate⁴⁰. Duncan, taking up Firey's criticism of the manner in which earlier ecological theories had excluded considerations of culture, has argued that "the functional and analytical approach of human ecology involves a concern not with culture as an undifferentiated totality but with aspects of culture as they play into the process of adaptation"⁴¹. Together with Schnore, Duncan has postulated an ecological complex that owes a good deal to Durkheim's *De la Division du Travail Social*⁴². The functionally interrelated basic components of the complex are environment, population, technology, and social organization, with the last conceived as "an adaptation to the unavoidable circumstance that individuals are interdependent and that the collectivity of individuals must cope with concrete environmental conditions"⁴³. On this view the study of urbanism (or of urbanization) involves specification of "the precise technological, demographic, and environmental conditions under which various urban forms of organizations may be expected to appear and—once established—to develop at given rates"⁴⁴. In so far as urban studies are concerned, the major advantage of the "ecological complex" is that it permits the deployment and analysis of large quantities of numerical data. Sjoberg has contended that this approach is overly materialistic and is deficient in that it rejects consideration of value systems⁴⁵. Moreover, the four components of the ecological complex require more rigorous definition than they have so far received, particularly the one labelled "social organization", which Duncan and Schnore appear to all intents and purposes to equate with division of labour. Recently Wheatley has attempted to take account of these criticisms in applying the theory to the problem of urban genesis⁴⁶. Closely related to the Duncan and Schnore model, though employing a neo-deductive methodology and stressing the notion of "sustenance", is the approach employed by Gibbs and Martin⁴⁷. At present this theory is descriptive rather than explanatory, and tends to confuse "materialism" with "ecology". However, it does incorporate both certain types of knowledge and beliefs in its definition of technology⁴⁸.

It is probably true to say that in whatever form an ecological theory has been presented it has been directed primarily towards the study of social organization as a response to pressures of environment, and as such has often disseminated a whiff of biological determinism. Nevertheless, the urban ecologists have made signal contributions to our understanding of the city. Reissman has summarized these contributions in the following words:

The ecological period in the history of urban sociology was as valuable as it was necessary. Its value derived from the quantity of information gained about the city. It was necessary because, as in the development of any science, the more apparent clues have to be investigated and evaluated before more complex abstractions are possible. A theory of the city, if it is at all possible, can be achieved only by recognition of the

complexity of the urban environment and creation of concepts that are abstract and general enough to deal with it⁴⁹.

Trait-complex approaches

One of the more productive essays in this genre—because it is one which has provoked a great deal of discussion—has been Louis Wirth's minimal definition of a city as "a relatively large, dense, and permanent settlement of socially heterogeneous individuals"⁵⁰. Wirth further attempted to associate a way of life with these postulated external criteria of size, density, permanence and heterogeneity, and in so doing went some way towards converting a simple aggregate of features into an ideal-type construct:

The contacts of the city may indeed be face-to-face but they are nevertheless impersonal, superficial, transitory and segmental . . . The superficiality, the anonymity, and the transitory character of urban social relations make intelligible, also, the sophistication and the rationality generally ascribed to city-dwellers . . . Whereas the individual gains, on the one hand, a certain degree of emancipation or freedom from the personal and emotional controls of intimate groups, he loses, on the other hand, the spontaneous self-expression, the morale, and the sense of participation that comes with living in an integrated society. This constitutes essentially the state of anomie, or the social void, to which Durkheim alludes⁵¹ . . .

There is reason to believe that when Wirth used the phrase "socially heterogeneous" he was concerned more with class differentiation than with ethnic diversity, but he was not explicit on this point. In any case, both social and ethnic heterogeneity are at best relative criteria and consequently difficult to apply cross-culturally. This led Bascom, who was attempting to evaluate the representative Yoruba city in terms of Wirth's model, to reject the criterion of heterogeneity in favour of the notion of formalized government, that is mechanisms of control on a secondary, supra-kinship level⁵². More recently Krapf-Askari, also attempting to accommodate the Yoruba city to the Wirthian paradigm, similarly rejected social heterogeneity as a necessary criterion of urbanism:

In the face of so many factors potentially separable from the settlement pattern as such, it might in the last resort be simpler to revert unambiguously to size, density, and permanence as criteria; i.e. to retain the loose, common-sense meaning of the words "town", "city", and "urban" to refer to all large, permanent, closely nucleated settlements. "City" and "town" might have quantitative referents, if these could be agreed upon; if not, they could continue to be used as quasi-synonymous. We could then

rely on one or more sets of descriptive categories to indicate the variables that may affect urban social life⁵³.

The fundamental difficulty with this approach arises, however, not from ambivalences in the concept of heterogeneity but from the assumption that size and density of population necessarily induce variations in behavioural patterns, in short that size generates differentiation in communities. In fact, there is little empirical evidence for the hypothesis that increases in size and density of a population promote anonymity and, together with a more intense division of labour, create social heterogeneity. Duncan's quantitative analysis of data from the 1950 census of the United States failed to reveal any close correlation between magnitude of population and such characteristics as relative size of income and age groups, mobility of population, extent of formal schooling, size of family, and proportions of non-white, foreign-born, white-collar or women workers⁵⁴. Reiss has gone farther in claiming that, "empirically, at least, "urban" can be independent of size and density. If this is true, then large size and high density of settlement are not always conditions for an urban way of life in any given community"⁵⁵. The truth of the matter surely is that Wirth's formulation, like Redfield's, in so far as it related to a way of life was not an inductive generalization from research findings but an emotionally charged ideal-type construct descriptive of the urban aggregations of Western Europe and North America at the end of the nineteenth, and in the earlier decades of the twentieth, century⁵⁶.

Wirth's view of the city was based essentially on moral considerations. "On the basis of the three variables, number, density of settlement, and degree of heterogeneity, of the urban population", he wrote in 1938, "it appears possible to explain the characteristics of urban life and to account for the differences between cities of various sizes and types"⁵⁷. The city was for him a crucible for the transformation of personality, producing such characteristics as reserve, blasé attitudes, indifference, sophistication, cosmopolitanism, rationality, relativistic perspectives, tolerance, competitiveness, self-aggrandizement, exploitative attitudes, frustration and irritation, nervous tension, instability, insecurity, tolerance of eccentricity and novelty, approval of efficiency and innovation, and a high degree of personal disorganization. From the same three population variables also stemmed such qualities of social organization as the importance and interdependence of specialists rather than of individuals; impersonal, transitory, superficial, segmental, and utilitarian social contacts; deterioration in the integration of social organization; a pecuniary nexus; an emphasis on time; predatoriness; formal controls; anonymity; a flexible caste structure counterbalanced by an intensified and ramified differentiation by income and social status; heightened mobility; involuntary segregation of racial, linguistic, income, and class groups; a high incidence of tenancy; diversification of, and rapid turnover in, group membership; importance of symbols and stereotypes; standardization of products and

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processes; gearing of facilities and institutions to the average user; subordination of individuality; weakening of kinship bonds; decline in the social significance of the family; loss of traditional bases of solidarity; disappearance of the neighbourhood; and replacement of territorially based social units by interest groups⁵⁸. With this formulation Wirth grappled with what he called "the central problem of the sociologist of the city", namely "to discover the forms of social action and organization that typically emerge in relatively permanent, compact settlements of large numbers of heterogeneous individuals"⁵⁹.

It will have been noted that numerous of the characteristics cited above are cultural in nature and not specific to urban life. Invention, for example, is not restricted to urban milieux. Nor is literacy, and sacred ties may well be stronger in some cities than in many villages and hamlets. Diversity of language and religion may also be greater in certain rural areas than in some urban communities, and complex technology may be employed in some farming areas while remaining relatively undeveloped in some cities. The ethnic heterogeneity of large American cities may well have been determined more by their settlement history and immigration policies than by their size. More important, perhaps, is the lack in the thesis of an adequate personality theory, which results in a deterministic attempt to deduce individual psychological traits from the urban environment. Lewis (1965, p. 497) has put this criticism succinctly enough:

The city is not the proper unit of comparison or discussion for the study of social life because the variables of number, density and heterogeneity as used by Wirth are not the crucial determinants of social life or of personality. There are many intervening variables. Social life is not a mass phenomenon. It occurs for the most part in small groups, within the family, within households, within neighborhoods, within the church, formal and informal groups, and so on.

Any generalizations about the nature of social life in the city must be based on careful studies of these smaller universes rather than on *a priori* statements about the city as a whole. Similarly, generalizations about urban personality must be based on careful personality studies.

It was probably the failure of this attempt to link analysis of a social system and conjecture about individual personality that led Wirth to attribute so many contradictory features to urban life. Presumably he regarded both élites and intellectuals on the one hand and slum dwellers on the other as sharing similar personalities, and he certainly viewed the city as a focus of learning, innovation, progress, and higher standards of living at the same time as it was a place of slums, poverty, crime and, above all, disorganization. It was at once the culmination of man's achievement and symbol of his greatest degradation, an antinomy that was subsequently to prove intractable in analytical studies and impossible to apply cross-culturally.

In assembling their clusters of diagnostic criteria some proponents of the trait-complex approach have, like Wirth, emphasized the rôle of institutions, while others have paid more attention to their material expression. Notable among these latter was Max Weber who, nearly half a century ago, wrote:

Denn dazu gehörte, daß es sich um Siedelungen mindestens relativ stark gewerblich-händlerischen Charakters handelte, auf welche folgende Merkmale zutrafen: 1. die Befestigung, —2. der Markt, —3. eigenes Gericht und mindestens teilweise eigenes Recht, —4. Verbandscharakter und damit verbunden, —5. mindestens teilweise Autonomie und Autokephalie, also auch Verwaltung durch Behörden, an deren Bestellung die Bürger als solche irgendwie beteiligt waren⁶⁰.

Weber realized that the inclusion of autonomy and autocephaly among these criteria disqualified from full urban status a very high proportion of those settlements of the traditional world which have customarily been designated as cities or towns. Complete autonomy has been comparatively rare in the history of urbanism and, city-states apart⁶¹, has usually fallen to a city accidentally and temporarily during periods of political disruption. Outside Europe truly privileged cities, enclaves of urban law islanded in territories subject to the common law of the state, have seemingly occurred only in fourteenth-century Japan, in the Nile delta during the interludes between the Kingdoms, and from time to time during, and in various parts of, the Hellenistic empires⁶². Weber was quite prepared to accept the far-reaching implications arising from his adoption of these criteria of urbanism: namely, those settlements which failed to incorporate the salient features of the European city failed in a greater or lesser measure to qualify for urban status. "Eine Stadtgemeinde im vollen Sinn des Wortes," he wrote in 1921, "hat als Massenerscheinung vielmehr nur der Okzident gekannt. Daneben ein Teil des vorderasiatischen Orients (Syrien und Phönizien, vielleicht Mesopotamien) und dieser nur zeitweise und sonst in Ansätzen"⁶³. Moreover, Weber did not explain the specific type of market that he had in mind, but presumably it was the autonomous, price-fixing market of Western classical economists, which we now know was by no means universal in the traditional world⁶⁴. Nor did he distinguish systematically between market and trade, and he would doubtless have been surprised to learn of the volume of exchange which was conducted in some ancient cities without benefit of a formal marketing system.

It is probably true to say that archaeologists, by reason of the tools and techniques that they employ, have tended to mould their discussions of cities on the principles elaborated by Lewis Henry Morgan, that is in terms of an easily recognizable set of traits supposedly indicative of a stage of social development. In other words they have selected as allegedly diagnostic a cluster of criteria from the constellation of features exhibited by early settlements which they have already designated as urban. This was indeed the

method by which the late Gordon Childe arrived at the ten indices whose concurrent appearance in the archaeological record he held to signify the advent of urban forms into the world, namely: the concentration of a relatively large number of people in a restricted area; craft specialization; the appropriation by a central authority of an economic surplus; monumental public architecture; developed social stratification; the use of writing; the emergence of exact and predictive sciences; naturalistic art; foreign trade; and group membership based on residence rather than kinship⁶⁵. As these criteria were explicitly delineatory rather than explanatory, it is not surprising that Childe was unable to establish functional relationships between them. In fact, although he was ostensibly investigating a *process*—that which he termed the Urban Revolution—he succeeded only in demarcating a *stage* of development. It will be observed, too, that some of his criteria, particularly naturalistic (“representational” would probably have been a more apposite term) art, appear to have been of minimal functional significance in the process of urban evolution⁶⁶. Moreover, not all of the criteria occurred in all early cities (e.g., writing was lacking both in the Inca cities, foci of the only true empire in the pre-colonial Americas and among the dense aggregations of population in the Yoruba territories⁶⁷), so that it is to be presumed that Childe himself regarded them less as indices of urbanism than as components in a constructed, or ideal-type, city. Yet other of the ten criteria are not specific to cities. Monumental architecture, for instance, is to be found in both pre-urban and non-urban contexts. It is also evident that from an operational point of view, Professor Childe’s criteria of urban status comprise one primary and several secondary variables, and he leaves us in no doubt that he regarded the progress of technology, resulting in the augmentation of food surpluses, as the dependent variable in the process of urban generation. Finally, the cluster of features that Professor Childe invoked to discriminate early cities bears no great resemblance in form or function to those of present-day urban settlements, and there is so far no incontrovertible support for the teleologically inspired implication that they were the first in a series of functionally interdependent institutional aggregations which, through succeeding centuries, approximated progressively more closely to those of the contemporary city.

Another archaeologist, John Rowe, has recently based a study of cities in prehispanic Peru on a somewhat unusual complex of allegedly urban traits.

For the purpose of the present argument, an urban settlement is an area of human habitation in which many dwellings are grouped closely together. The dwellings must be close enough together to leave insufficient space between them for subsistence farming, although space for gardens may be present. In the case of a site where the foundations of the dwellings have not been excavated, an extensive area of thick and continuous habitation refuse provides a basis for supposing that the settlement was an urban one.

The intent of this definition is to exclude clusters of dwellings so small that they could be interpreted as belonging to the members of a single extended family. Twenty dwellings is perhaps the minimum number which would provide this exclusion⁶⁸.

Rowe goes on to classify urban forms as *pueblos* and *cities*, using the former "to designate an urban settlement in which all the residents are engaged in hunting, fishing, farming or herding at least part of the time", and city "to designate one which includes residents engaged in other activities (manufacturing, trade, services, administration, defence, etc.)"⁶⁹. According to this interpretation the earliest known urban form in Peru was the pre-ceramic habitation site at Haldas, but the definition is sufficiently idiosyncratic not to recommend itself for cross-cultural studies. In the Middle East at least one archaeologist has ascribed urban status to a settlement solely by virtue of its being enclosed within a wall. The early settlement at Tell es-Sultan, Kenyon has written, "is quite clearly on the scale, not of a village but of a town. Its claim to a true civic status is established by the discovery . . . that it possessed a massive defensive wall"⁷⁰. Needless to say, reliance on a single morphological feature of this character would, if pushed to its logical extreme, make most of the world urban for most of its history.

In the nineteen-forties the trait-complex approach was applied to contemporary urban forms by Smailes, who investigated clusters of key services which he regarded as indicative of various grades of urban development. Full urban status ("a fully-fledged town" in his terminology) was denoted by the combination of (i) a shopping centre with a full range of specialized retail services (reflected in the presence of at least three banks and a Woolworth's store), and (ii) a set of institutions providing social, educational, and health services for the surrounding district (reflected in the presence of a cinema, a weekly newspaper, a secondary grammar school, and a hospital). Other clusters of features were stipulated for "sub-towns", "urban villages", "cities", and "major cities"⁷¹. Similar investigations subsequently undertaken in Germany, the United States, and India modified the several sets of criteria to accord with local conditions. Somewhat earlier Dickinson had devised a similar but simpler classification of East Anglian towns on much the same principle⁷².

Cities as centres of dominance

Recently Horace Miner has considered the role of the city as a power phenomenon, a centre of dominance⁷³:

As social units become differentiated in function, a hierarchy of power relations arises from the greater inherent influence of some functions, and particularly from the emergence of units to co-ordinate the differentiated parts. When the United States is regarded as such a system of

interdependence, research results clearly support the contention that "the units which mediate and control these dependency relationships tend to be localized in the large urban centres" . . .

When we examine the logic which draws political and economic power together in the city, we find that, to a degree, they tend to have a single locus because they are different aspects of the same thing. But even when separate systems of control are discernible, one kind of power is used to secure another, and various sorts of control become concentrated in the same individual through his positions in the different systems. On the other hand, this very fact complicates the maintenance of the system boundaries . . .⁷⁴

As explicated by Miner this conceptualization of urban function would seem to be descriptive rather than explanatory. In many ways closely similar is John Friedmann's notion of the city as a generator of effective space. "The hierarchy of urban places", this author writes, "represents the ultimate means for organizing a geographic area into its component social, political-administrative and economic spaces . . . A mere area becomes effective 'space' . . . solely through the agency of urban institutions which extend their influences outward, binding the surrounding regions to the central city and introducing to them urban ways of thought and action"⁷⁵. One sector of the spectrum of relationships focused in the city in this way, the provision of tertiary goods and services, has served as a basis for one of the best developed bodies of theory in urban studies, namely the Theory of Central Place.

The pattern of settlement in a region typically consists of three component elements: a linear pattern arising from break-of-bulk and allied services provided by transport foci disposed in relation to communication routes; a cluster pattern made up of centres concerned with specialized activities that may range from mining and manufacturing to the provision of recreation and religious facilities; and a uniform pattern consisting of settlements each of which performs comprehensive services for a surrounding area, and which is consequently customarily referred to as "a central place"⁷⁶. To date, no model has been constructed capable of accommodating the generation and location of all three components of a settlement pattern, but a great deal of research has been devoted to elucidation of the arrangement and distribution of central places. Although the idea of a more or less regular distribution of such central places had been advanced in embryonic form by Léon Lalanne as early as 1863⁷⁷ and by C. J. Galpin in 1915⁷⁸, the foundations of a central-place theory were laid by Walter Christaller in 1933⁷⁹. On the basis of the fundamental spatial concept of the range of a good, and using purely economic arguments, Christaller was able to define an optimal spatial arrangement for a hierarchy of settlements developed on the assumption of an isotropic surface⁸⁰. In the model derived under these conditions settlements are regularly spaced to form a triangular lattice, and are centrally located within hexagonally

shaped market areas, this shape of area requiring the least average distance of movement by consumers to the central settlement⁸¹. The hierarchical dimension in this pattern arises from the assumption that higher-order central places supply all the goods and services offered by lower-order central places together with a number of higher-order goods and services distinctive to themselves. Higher-order central places therefore provide wider ranges of goods and services, are loci for larger clusters of establishments, house bigger populations, serve more extensive market areas and market-area populations, and engage in greater volumes of business than do lower-order central places. It follows that this hierarchical arrangement is expressed spatially in higher-order central places being more widely spaced than lower-order central places, and in lower-order central places "nesting" within the market areas of higher-order central places according to a definite rule. Because of the competitive basis to this solution, in which it is assumed that all areas are able to be served from a minimum of central places, Christaller described the system as organized according to a "marketing principle". The progressive increase in numbers of market areas at successively higher levels of the hierarchy by a rule of threes led subsequent workers to refer to the hierarchy developed on this principle as a K-3 network⁸². Christaller himself postulated two alternative hierarchies, arranged according to (i) a "transport principle" which permits the hierarchy to maximize the number of central places located on major transport routes and which results in a nesting of complementary regions according to a rule of fours (K-4); and (ii) an "administrative principle" requiring political-social separation of complementary regions, which is achieved when each central place controls six lower-order places. Nesting is accordingly by rule of sevens (K-7). In each case the whole hierarchical system is integrated with, and is given coherence by, an interconnected set of regional and national metropoleis.

During the last thirty years Christaller's exposition of Central Place Theory has undergone considerable modification and elaboration. August Lösch, in particular, has greatly strengthened its theoretical foundations⁸³. Whereas Christaller had assumed that, once generated by regional development, K values would remain constant, Lösch incorporated in his theoretical statement all possible hexagonal solutions, with the fixed-K assumptions of the marketing, traffic and administrative principles represented only as special limiting cases. By rotating the nest of possible hexagonal patterns all centred on one point—which he designated the metropolis, the highest order of central place in his system—Lösch was able to effect the greatest degree of coincidence in the locations of cities, the minimization of the aggregate distance between all settlements, and the maximization of the quantity of goods that could be supplied locally. The pattern that emerges from this manipulation of the hexagonal market areas comprises twelve sectors of alternating many and few central places, each of which exhibits considerable variation in incidence

of urban forms with distance from the metropolis⁸⁴. This hierarchy is less rigid than that developed by Christaller, and consists of a more or less continuous sequence of central places in contrast to the distinct tiers of settlements postulated in the earlier model⁸⁵. It follows, therefore, that cities of the same size do not inevitably exercise the same functions, and that the functions of larger central places do not necessarily subsume all those of smaller central places. It would appear that Christaller's formulation is likely to throw more light on the distribution of retail and service business, while Löschian analysis is probably more relevant to an understanding of the spatial distribution of market-oriented manufacturing⁸⁶. It is also possible that Christaller's model is better adapted to study of systems of cities founded in areas of sparse settlement, whereas that of Lösch provides a more satisfactory framework for analysis of settlement patterns in regions of dense, long established settlement⁸⁷.

It will have been noticed that the formulations of both Christaller and Lösch were developed on the basis of economic theory without reference to the behaviour of retailers and consumers. In an attempt to develop an operationally more expedient formulation, Curry sought to shift the emphasis of investigation from its preoccupation with an economic rationale to a description of general patterns of behaviour. To this end he substituted random variables descriptive of shopping habits, elements of retailing policy, and suchlike for Christaller's economic postulates⁸⁸. Using a characteristic spectral-density function to describe the gross periodic activities of consumers, he then adduced the ergodic hypothesis to relate temporal behaviour to spatial form. In other words, he treated the regularities of consumer behaviour through time as possessing the same statistical properties as does the spatial pattern of retail locations.

Christaller seems to have been more than a little inclined to view his formulation as a general theory of urban location:

Für das Entstehen, die Entwicklung und das Vergehen von Städten ist es ganz eindeutig ausschlaggebend, ob die Bewohner der Stadt hier ihre Erwerbsmöglichkeiten finden und ob ein Bedürfnis nach den Dingen, die die Stadt als solche zu bieten hat, besteht: somit sind aber wirtschaftliche Tatsachen entscheidend für das Vorhandensein von Städten—für die Existenz der ländlichen Siedlungen, deren Häuser ja alle gleichzeitig Produktionsstätten sind, sind wirtschaftliche Gründe ja ohne weiteres maßgebend—; daher ist die Siedlungsgeographie ein Teil der Wirtschaftsgeographie, es ist, wie überhaupt in der Wirtschaftsgeographie, die ökonomische Theorie heranzuziehen, wenn das Städtewesen erklärt werden soll. Wenn es nun in der ökonomischen Theorie Gesetze gibt, so muß es auch Gesetze in der Siedlungsgeographie geben, und zwar ökonomische Gesetze von besonderer Ausprägung, die man speziell als wirtschaftsgeographische Gesetze ansprechen könnte⁸⁹.

It would appear from this statement that Christaller regarded the economy as an autonomous agent in the generation of the settlement hierarchy, but it is likely that in pre-modern societies more often than not it was only a subsystem of the more inclusive category of culture⁹⁰. Indeed Parsons and Smelser adopt this point of view even in relation to contemporary society⁹¹. In fact, it is now accepted that Central Place Theory is concerned only with the location of tertiary economic activity, but even in this restricted context it provides a useful theoretical basis for a broad sector of the field of urban studies.

A great deal of recent work in central-place studies has been concerned with attempts to test the several theoretical formulations against data derived empirically from contemporary situations. Faced with the difficulty of matching in the so-called real world the isotropic surface postulated by Christaller, experimental investigators have tended either to view the inevitable discrepancies—such as irregularities in the distribution of population and purchasing power, diversified terrain, unequal incidence of resources and transport facilities—simply as operational reasons for the incongruence of actual spatial patterns with those predicted by theory, or to incorporate negative evidence in the formulation as morphological variants. More than a decade ago Berry and Garrison somewhat simplified the problem when, using only the concepts of range and threshold, they were able to restate the theory in a manner that no longer required the assumptions of a uniform distribution of population and a hexagonal shape for market areas, thus permitting its application to intra-urban and highway ribbon development⁹². Subsequently, various probabilistic interpretations have been introduced into the theory. Thomas, for example, examined Christaller's concept of "centres of the same population-size class" in a stochastic context. By using a normal curve of error to determine whether cities were of *significantly* similar populations and at *significantly* similar distances apart, he was able to establish the relative stability of their population-size and distance relationships⁹³. More recently Dacey has conceived Central Place Theory in terms of an equilibrium solution for a spatial arrangement of settlements subject to the influence of external forces, but with inconclusive results⁹⁴. In fact, the error-term incorporated in the data from Dacey's study area in Iowa (presumably induced by non-economic forces) is so large that it is unlikely ever to be susceptible to treatment by the classical theory of errors.

Recently Harvey has drawn attention to an even more fundamental problem in the search for empirical evidence with which to test Central Place Theory. This formulation, he points out, is derived from a theory of demand which Clarkson has demonstrated to be inherently unverifiable by reference to empirical evidence⁹⁵; therefore it cannot itself yield empirically testable hypotheses. "The only alternative", he writes, "is to regard settlement location as an economic process to which non-economic processes contribute a noise' or 'error-term' element"⁹⁶. Perhaps in this conclusion he is being

unduly pessimistic. Possibly that error-term can eventually be incorporated in an expanded Theory of Central Place. Possibly it may ultimately prove feasible to devise a model of the urban hierarchy on broadly cultural and socio-economic principles rather than on narrowly economic ones, to construct a theory of urban size and location in which, say, the administrative principle is not, as in Christaller's model, an alternative to the economic principle but in which both principles complement one another. Certainly settlement hierarchies based on other than an economic rationale have been observed in various parts of the world. The imposed hierarchy of administrative central places which existed side by side with, and reinforced, the indigenously generated market-based hierarchy in China has been the subject of frequent comment⁹⁷. In quite a different context von Grünebaum has sketched the outline of a sacral hierarchy of cities in the Muslim world. Interestingly enough, he emphasizes that cities performing higher-order sacral functions invariably perform lower-order sacral functions in addition⁹⁸.

The principle of dominance has also been invoked in discussions of the internal structure of cities. In the modern city, it is alleged, the multitude of individual decisions which combine to create the pattern of land utilization are regulated in the main by economic processes operating in society⁹⁹. Competition for the use of available locations results in the occupation of each site by the firm able to derive the greatest utility from it and, therefore, able to pay the highest rent. The ideal-type pattern generated by this principle is one in which rents are maximized throughout the system and all activities optimally located. High land values in central zones are associated with ease of intra-urban accessibility, savings in transport costs being set against higher rent payments for central locations. At different times different models have been proposed to depict the spatial patterns of land utilization thus induced, among which the best known are (i) the concentric model of Burgess, which assumes that accessibility and land values decline with equal regularity in all directions from a common central point¹⁰⁰; (ii) the sector model of Hoyt, which takes account of differences in accessibility and, therefore, in land values along routeways radiating outwards from the city centre¹⁰¹; and (iii) the multiple nuclei model of Harris and Ullman, which develops zones of land-use around discrete centres arising from peculiarities of site and evolution¹⁰². These models are not mutually exclusive, and elements of all three can be discerned in many urban forms, especially in the conurbations created by the fusion of several cities. In fact Marble has proposed a model that takes account of just such fusions as radially patterned growth around individual nuclei intersected by axial growth extending outwards from the city centre¹⁰³. The resulting pattern is one in which discrete social, economic and technical zones are integrated into a star-shaped urban form.

Partial, as opposed to comprehensive, theories of urban internal structure such as have just been discussed have been concerned mainly with the distribution of population densities and the deployment of commercial enter-

prises. Somewhat surprisingly patterns of land utilization appear to exert relatively little control over population densities which, generally speaking, decline as a negative exponential function of distance from the city centre¹⁰⁴. There is reason to think that older and larger industrial cities tend to exhibit higher overall population densities¹⁰⁵, and that larger cities with low transport costs, dilapidated central sectors, and dispersed employment centres tend to be more compact¹⁰⁶. Winsborough has shown that population densities in the central sectors are a function of overall population density within the city, which can itself be correlated fairly directly—and not altogether unexpectedly—with the total population, its status as a manufacturing centre, and the proportionate age of its dwellings¹⁰⁷.

It is implicit in the concentric, sector, and multiple-nuclei theories that all substantial retail outlets are subsumed within the Central Business District in the heart of the city. The pioneer investigations of urban commercial structure were directed towards elucidation of its morphological aspects¹⁰⁸, but more recently Berry has devised a descriptive model which recognizes three basic conformations, namely shopping centres providing convenience and shopping goods primarily for local purchasers, ribbon developments catering mainly for demands generated by traffic flows along major transport routes, and specialized centres providing for specific consumer needs¹⁰⁹. The arrangement of shopping centres has usually been examined within a framework of Central Place Theory, but evidence is accumulating to suggest that more than one hierarchy is present in any one city. Berry, Tennant, Garner and Simmons, for example, basing their analysis on the technique of factor analysis, have shown in 1963 that there is likely to be a relatively higher duplication of functional types in lower-income enclaves where demand is both quantitatively less and qualitatively poorer.

Investigations of urban internal structure have been confined almost entirely to the so-called Western world, Japan¹¹⁰, and the metropoleis of the developing countries¹¹¹, to the virtual exclusion of the traditional city—where, incidentally, the current emphasis on autonomous economic processes may well prove to be analytically less profitable. In many traditional urban forms, for example, the pre-eminence of the central sector over the periphery derived less from economic and technological considerations than from a principle that may conveniently be termed proximity to the focus of power in both its secular and sacred, material and ritual, aspects¹¹². In such cities rent-distance relationships appear to have been structured on principles that generated a zoning of land-uses somewhat different from those commonly encountered in the modern city. Not only were location patterns based primarily on localized vertical organizations and product groupings (represented typically by producer-retailers in traditional-style bazaars¹¹³), but the central precinct was also often reserved for ritual purposes, a situation which tended to create central population-density craters that persisted in many cases until the onset of modernization¹¹⁴.

The expedient approach

This has been the preferred approach of both demographers and administrators, and has usually been based on a classification of population size. The main difficulties arise from the fact that absolute size is not necessarily directly related to structure, form or function but varies widely in its significance from culture to culture and from time to time, with the result that the classification is often arbitrary. In Denmark, Sweden, and Finland, for example, a settlement of a mere 250 people is accorded urban status, whereas in Canada the relevant figure is 1,000, in Venezuela 2,500, in Ghana 5,000, and in Greece, Spain and Switzerland 10,000. The Indian Census is more ambitious, combining size with population density and employment characteristics in its definition of urban form. Before a settlement can be so classified it must house more than 5,000 inhabitants, clustered so as to produce a density exceeding 1,000 to the square mile. Additionally, more than 75% of adult males must be engaged in work other than agriculture. However, the size factor appears to be regarded as normative rather than essential for, of the 2,700 urban settlements recorded in the 1961 *Census of India*, no less than 268 have populations fewer than 5,000 (p. 261). Furthermore, as many as 4,198 settlements which would seem to qualify as "urban" by reason of population size are in fact classified as villages (p. 243).

In an attempt to obviate the deficiencies of fixed population densities, which are liable to obscure both significant regional and cultural variations in urban incidence, Grytzell has employed a sliding-scale of population density to demarcate the city areas of New York, London, Paris, Stockholm and Copenhagen¹¹⁵. He argues that the "urbanness" of a settlement resides in its population density *relative to surrounding territories*. Administratively inspired classifications have usually been of a simpler nature than Grytzell's, but an exception is provided by the United States Bureau of the Census which publishes urban data for four different levels of organization: (i) *the urban place*, which is a settlement of 2,500 or more inhabitants; (ii) *the incorporated city*, with 2,500 or more inhabitants, and which also has a distinct political identity; (iii) *the urbanized area*, which comprises a city of 50,000 or more inhabitants together with its urban-fringe zone; (iv) *the standard metropolitan statistical area*. Cast in terms of density, function, and level of integration, this is the most complex definition of urban status employed in any country. An SMSA is based on at least one city of 50,000 or more inhabitants, to which are added adjacent counties that are "metropolitan" in character. By this is meant that they contain at least either 10,000 non-agricultural workers or 10 per cent of the non-agricultural workers of the SMSA, or have at least 50% of their population residing in civil divisions both contiguous to the central city and containing population densities of 150 or more per square mile, and that non-agricultural workers constitute at least two-thirds of their

total employed population. In addition there are mandatory criteria of integration between outlying counties and that one in which the central city is located: namely, 15% of the labour force in an outlying county must work in the county containing the central city, and the number of telephone calls per month to the central-city county must be at least four times the number of subscribers in the outlying county¹¹⁶. But even these apparently comprehensive criteria cannot be applied in New England where an exception has to be made to meet the exigencies of an historically entrenched "township" system; and it is only too evident that a definition as distinctively "American" as this would require considerable modification before it could be used for cross-cultural purposes. Nevertheless, the International Urban Research Group of the University of California at Berkeley has attempted a generalized definition of the term "metropolitan area" applicable to the whole world, and their somewhat involved conclusions run to no less than twelve pages of their report¹¹⁷.

Generally speaking, these expedient definitions based on numerical size (and sometimes grandly referred to as demographic classifications) are more useful in the study of *urbanization* than in a discussion of *urbanism*. Of course, such operational classifications need not be formulated in terms of numbers of population. For example, various types of legal definitions are in current use in different parts of the world. In Turkey, Czechoslovakia, the United Arab Republic, and the Dominican Republic officially the sole criterion of urbanism is the performance of a specific administrative function; while in Algeria, Japan, Tunisia, and the United Kingdom urban status is dependent upon the existence of a particular mode of local government. In both cases urbanism is decreed rather than defined, and its ecological characteristics subordinated to the needs of administrative expediency¹¹⁸.

* * *

It will have become apparent in the foregoing pages that the five approaches discussed there are not conceptually distinct and by no means mutually exclusive. A simple trait complex, for instance, borders on an ideal-type whenever its author associates it with a mode of behaviour, an elaborate census definition designed as an operational expedient can come very close to qualifying as a trait complex, and an ecological approach is always likely to expound its discoveries in terms of dominance. However, although the *strategies* are complementary, or at least mutually supportive, they are jointly directed towards four seemingly contradictory—or at best competing—*conceptions* of urbanism in terms of (i) an interactional model which emphasizes the growth and structure of specialized networks of social, economic, and political relationships focused in cities; (ii) a normative model in which

said to subsume three analytically separable conceptions, each appropriate to a particular genre of questions and each characterized by its own peculiar difficulties of definition and measurement: (i) the behavioural conception, which views urbanization as an adjustment of personal conduct, as a transformation of attitudes and values experienced by individuals over time. (ii) The structural conception which focuses attention on the patterned activities of whole populations, generally in situations where subgroups from mainly agricultural communities are being absorbed into larger, more complex, non-agricultural communities. It follows that this conception of urbanization tends to concentrate on the differential ordering of occupations or industries within a specified territorial space. (iii) The demographic conception which, while also focusing attention primarily on aggregate groupings within defined spaces, largely ignores both individual behaviour and occupational structure, and concerns itself almost exclusively with the process of population concentration. Consequently this conception recognizes only two significant variables: population and space. On this theme see Lampard, E. E. (1965). Historical aspects of urbanization, in Hauser, P. M. and Schnore, L. F. *The Study of Urbanization*. New York, London and Sydney. pp. 519-20. See also Lampard, E. E. (1963). Urbanization and social change: on broadening the scope and relevance of urban history, in Handlin, O. and Burchard, J. (eds.) *The Historian and the City*. Cambridge, Mass. pp. 225-47; Tisdale, H. (1942). The process of urbanization, *Social Forces*, 20, pp. 311-316; Gibbs, J. P. (1966). Measures of urbanization, *Social Forces*, 45, pp. 170-7. For the suggestion that indices of the degree of urbanization of different sectors of the population within a city might be based on the available "range of alternatives for individuals in most aspects of living" see Lewis, O. (1965). Further observations on the folk-urban continuum and urbanization with special reference to Mexico City, in Hauser, P. M. and Schnore, L. F. *op. cit.* p. 499.

The concept of *over-urbanization* has received some attention in recent years, e.g. Davis, K. and Golden, H. H. (1954). *op. cit.* esp. pp. 16-20; Sovani, N. V. (1964). The analysis of "over-urbanization", *Economic Development and Cultural Change*, 12, pp. 113-22; Kamerschen, D. R. (1969). Further analysis of over-urbanization, *Economic Development and Cultural Change*, 17, pp. 235-53; Hauser, P. M. (ed.) (1957). *Urbanization in Asia and the Far East*. Calcutta. pp. 8-9; Ness, G. D. (1962). Asian over-urbanization and the industrial distribution of the labour force, *Proceedings of the International Association of Historians of Asia: Second Biennial Conference 1962*. Taipei. pp. 657-75. Basically this concept is concerned with the relationship between the proportion of urban dwellers in a country's population and the apportionment of that country's total labour force between agricultural and non-agricultural occupations. In other words it represents a fusion of the demographic conception (viewing urbanization primarily in terms of a spatial index) with the structural conception (emphasizing mainly the occupational patterns of a total population). Difficulties in the application of this notion of over-urbanization arise mainly in the process of deciding what should be regarded as the normative relationship between these two indices, and to this problem there have been two approaches. The first (represented by the work of Davis, K. and Golden, H. H. (1954). *op. cit.* pp. 16-20) is based on cross-sectional analysis of such data as censuses provide for the contemporary world. The second relies on historical analogy and seeks to derive its norm from the proportion of the labour force engaged in other than agricultural occupations in the presently industrially advanced countries at a time when their levels of urbanization were generally comparable to those of the underdeveloped world of today. This approach is represented by the relevant sections of Hauser, P. M. (ed.) (1957). *op. cit.*

- 2 For the settlement pattern as representing the centre of gravity of continuous population movements see Hägerstrand, T. (1957). Migration and area. Survey of a sample of Swedish migration fields and hypothetical considerations on their genesis, *Lund Studies in Geography, Series B, Human Geography*, 13, pp. 27-8.
- 3 The most succinct account of this transformation is that provided by Adams, R. McC. (1966). *The Evolution of Urban Society. Early Mesopotamia and Prehispanic Mexico*. Chicago.
- 4 It is Reissman's explicit view that they are not. "The ancient city," he writes, "the medieval city, and the industrial city are . . . quite different social phenomena", and, "Although cities in different periods resemble each other in some ways (e.g. size), the social bases of urban organization have differed": Reissman, L. (1964). *The Urban Process. Cities in Industrial Societies*. New York. pp. 16 and 19.
- 5 On the general problem of elucidating the nature of urbanism see specifically McTaggart, W. D. (1965). The reality of "urbanism", *Pacific Viewpoint*, 2, pp. 220-1, and more generally Jones, W. T. (1965). *The Sciences and the Humanities. Conflict and Reconciliation*. Berkeley and Los Angeles. Ch. 2.
- 6 Cf. Popper, K. (1957). *The Poverty of Historicism*. London. pp. 26-34.
- 7 For a definition of this term see p. 603.
- 8 Cf. Jeremia, W. R. (1958). *Handbuch zum Alten Testament*, 12. Tübingen. pp. 207 ff; Ben-gavriel, M. Y. (1962-3). Das nomadische Ideal in der Bibel, *Stimmen der Zeit*, 88/171, pp. 253-63; Hertzler, J. O. (1936). *Social Thought of the Ancient Civilizations*. New York. pp. 298ff. A similar recognition of distinct "integrated patterns of dominant attitudes", or styles of life, is evident in Hesiod's description of the countrymen of Boeotia in the sixth century B.C. [See Francis, E. K. L. (1945). The personality type of the peasant according to Hesiod's *Works and Days*, *Rural Sociology*, 10, pp. 275-95. First cited in this connection by Robert Redfield: cf. Note 19] and in Plato's several discussions of the virtues of urban life in *Critias*, *The Laws* and *The Republic*.
- 9 Cp. "In the court [that is, urbanized society] it is nobility that holds the first place, in the village it is age" (II, ii, 3, 6).
- 10 Maine, Sir Henry (1861: here cited from 1963 reprint). *Ancient Law. Its Connection with the Early History of Society and its Relation to Modern Ideas*. Boston. p. 165.
- 11 Morgan, L. H. (1877). *Ancient Society, or, Researches in the Lines of Human Progress from Savagery through Barbarism to Civilization*. New York.
- 12 Tönnies, F. (Eighth revised edition, 1935). *Gemeinschaft und Gesellschaft*. Leipzig.
- 13 Weber, M. (1947). *The Theory of Social and Economic Organization*. Transl. by Henderson, A. M. and Parsons, T. New York. pp. 136-8, 329ff and 341ff.
- 14 Notably Herbert Spencer (1892). *Principles of Sociology*. 1. New York ["Military" as opposed to "Industrial"]; Becker, H. (1950). Sacred and secular societies, *Social Forces*, 28, pp. 361-76; Becker, H. and Barnes, H. E. (1952). *Social Thought from Lore to Science*. Washington. ch. 1 ["Sacred" as opposed to "Secular"]. Also Becker, H. (1957). Current sacred-secular theory and its development, in Becker, H. and Boskoff, A. (eds.) *Modern Sociological Theory in Continuity and Change*. New York. The most comprehensive treatment of these paired terms is provided by Becker, H. (1950). *Through Values to Social Interpretation*. Durham North Carolina.
- 15 Durkheim, E. (1893). *De la Division du Travail Social: Etude sur l'Organisation des Sociétés Supérieures*. Paris. Especially chs. 2 and 3. For an application of this ideal-type construct to urban forms among the Maya and the

- Khmer see Coe, M. D. (1961). Social typology and the tropical forest civilizations, *Comparative Studies in Society and History*, 4, pp. 65-85.
- 16 Mauss, M. (1925). *Essai sur le Don, Forme archaïque de l'Echange*. Paris.
- 17 Redfield, R. and Singer, M. B. (1954). The cultural role of cities, *Economic Development and Cultural Change*, 3, pp. 53-73.
- 18 Redfield, R. (1947). The folk society, *Amer. J. Sociol.*, 52, pp. 293-308.
- 19 Redfield, R. (1953). *The Primitive World*. Cornell. pp. 31 and 53. This characterization probably owed something to an earlier definition of peasant society by Kroeber, A. L. (1948). *Anthropology*. New York. p. 284. Note especially: "Peasants are definitely rural—yet live in relation to market towns; they form a class segment of a larger population which usually contains urban centres, sometimes metropolitan capitals. They constitute part-societies with part-cultures." Of course, by insisting on viewing urban society as simply the antithesis of folk society, and thereby denying real independence to typically urban features, Redfield went a good way towards subverting the utility of his construct.
- 20 In fact in these later works Redfield adopted a neo-evolutionary point of view and tended to identify "folk" with "pre-urban" society; e.g. Redfield, R. (1953). *The Primitive World and its Transformations*. Ithaca; N.Y. Other works in which Redfield invokes or elaborates on the folk-urban or rural-urban dichotomies and continua include: Redfield, R. (1941). *The Folk Culture of Yucatan*. Chicago; Redfield, R. (1953). The natural history of the folk society, *Social Forces*, 31, pp. 224-8; Redfield, R. (1954). *The Little Community. The Göttesman Lectures, V*. Uppsala; Redfield, R. (1956). *Peasant Society and Culture*. Chicago.
- 21 Queen, S. A. and Carpenter, D. B. (1953). *The American City*. New York. p. 38.
- 22 Cf., for example, Tax, S. (1941). World view and social relations in Guatemala, *Amer. Anthropol.*, 43, pp. 27-42; Caplow, T. (1949). The social ecology of Guatemala city, *Social Forces*, 28; Lewis, O. (1952). Urbanization without breakdown: a case study, *The Scientific Monthly*, 75; Lewis, O. (1951). *Life in a Mexican Village: Tepoztlan Restudied*. Urbana; Lewis, O. (1955). Peasant culture in India and Mexico, in Marriott, McK. Village India, *Amer. Anthropol.*, 57, Memoir 83, esp. p. 165; Bopegamage, A. (1957). *Delhi: a Study in Urban Sociology*. Bombay. pp. 93-103; Desai, I. P. (1964). *Some Aspects of Family in Mahuva*. Bombay.
- 23 On this point see particularly Foster, G. M. (1953). What is folk culture? *Amer. Anthropol.*, 55, pp. 159-73.
- 24 Reissman's phrase [Reissman, L. (1964). *The Urban Process*. Glencoe, Ill. p. 123]. Hofstee used the less complimentary phrase "vulgar Tönniesism" in referring to the polar typologies discussed here [Hofstee, E. W. (1960). Rural social organization, *Sociologia Ruralis*, 1, pp. 105-17].
- 25 All, and more, of these criticisms of the folk-urban and rural-urban dichotomies and continua are to be found in, *int. al.*, the following works: Spaulding, I. A. (1951). Serendipity and the rural-urban continuum, *Rural Sociology*, 16, pp. 29-36; Miner, H. (1952). The folk-urban continuum, *Amer. Sociol. Rev.*, 17, pp. 529-37; Mintz, S. W. (1953). The folk-urban continuum and the rural proletarian community, *Amer. J. Sociol.*, 59, pp. 136-43; Mintz, S. W. (1954). On Redfield and Foster, *Amer. Anthropol.*, 56, pp. 87-92; Duncan, O. D. (1957). Community size and the rural-urban continuum, in Hatt, P. K. and Reiss, Jr., A. J. (Second edition) *Cities and Society. The Revised Reader in Urban Sociology*. Glencoe, Ill. pp. 35-45; Duncan, O.D. and Reiss, Jr., A. J. (1956). *Social Characteristics of Urban and Rural Communities, 1950*. New York and London. pp. 37-40; Reiss, A. J. (1959). Rural-urban and status differences in interpersonal contacts, *Amer. J. Sociol.*, 65, pp. 182-95; Stewart, C. T. (1958). The urban-rural dichotomy: concepts and uses, *Amer. J. Sociol.*, 64, pp.

- 152-8; Dewey, R. (1960). The rural-urban continuum: real but relatively unimportant, *Amer. J. Sociol.*, 66, pp. 60-6; Benet, F. (1963). Sociology uncertain: the ideology of the rural-urban continuum, *Comparative Studies in Society and History*, 6, pp. 1-23; Reissman, L. (1964). *The Urban Process. Cities in Industrial Societies*. New York. pp. 122-38; McGee, T. G. (1964). The rural-urban continuum debate, the pre-industrial city and rural-urban migration, *Pacific Viewpoint*, 5, pp. 159-81; Lewis, O. (1965). Further observations on the folk-urban continuum and urbanization with special reference to Mexico City, in Hauser, P. M. and Schnore, L. F. *op. cit.* pp. 491-503; Hauser, P. M. (1965). Observations on the urban-folk and urban-rural dichotomies as forms of Western ethnocentrism, in Hauser, P. M. and Schnore, L. F. *op. cit.* pp. 503-17; Pahl, R. E. (1966). The rural-urban continuum, *Sociologia Ruralis*, 6, pp. 299-329; Ommen, T. K. (1967). The rural-urban continuum re-examined in the Indian context, *Sociologia Ruralis*, 7, pp. 30-48.
- 26 Lewis, O. (1965). *op. cit.* p. 491.
- 27 Hauser, P. M. (1965). *op. cit.* p. 514.
- 28 Defined by Daniel Lerner as "the social process of which development is the economic component": Lerner, D. (1967). Comparative analysis of processes of modernization, in Miner, H. *The City in Modern Africa*. New York, Washington and London. p. 21.
- 29 See, for example, Lampard, E. E. (1955). The history of cities in the economically advanced areas, *Economic Development and Cultural Change*, 3, pp. 81-136.
- 30 See, for example, Kolb, W. L. (1955). The social structure and functions of cities, *Economic Development and Cultural Change*, 3, pp. 30-46.
- 31 Hoselitz, B. (1955). Generative and parasitic cities, *Economic Development and Cultural Change*, 3, pp. 278-94.
- 32 Barber, W. J. (1967). Urbanization and economic growth: the cases of two white settler territories, in Miner, H. *op. cit.* pp. 91-125.
- 33 Mabogunje, A. L. (1968). *Urbanization in Nigeria*. London. pp. 21-6 and 315-19.
- 34 Space forbids that I enter into discussion of the various philosophies of organicism that have been applied to the city, and of which the most recent is Lewis Mumford's metaphorical conception of the city as a neurotic person [Mumford, L. (1961). *The City in History. Its Origins, its Transformations, and its Prospects*. New York].
- 35 Cf. Coker, F. W. (1910). *Organismic Theories of the State: Nineteenth Century Interpretations of the State as Organism or as Person*. Columbia University Studies in History, Economics, and Public Law, 38. New York.
- 36 Park, R. E. (1916). The City: suggestions for the investigation of human behavior in the urban environment, *Amer. J. Sociol.*, 20, pp. 577-612.
- 37 Reissman, L. (1964). *The Urban Process. Cities in Industrial Societies*. New York. p. 99. Chapter 5 of this work affords one of the most succinct and perspicacious evaluations of the contributions of the school of urban ecologists.
- 38 Firey, W. (1946). *Land Use in Central Boston*. Cambridge, Mass.
- 39 Park, R. E. (1939). Review of Alihan's *Social Ecology*, *Ann. Amer. Acad. Political and Social Science*, 202, pp. 264-5.
- 40 Summary by Reissman, L. (1964). *op. cit.* pp. 115-16.
- 41 Duncan, O. D. (1959). Human ecology and population studies, in Hauser, P. M. and Duncan, O. D. *The Study of Population*. Chicago. p. 682.
- 42 Duncan, O. D. and Schnore, L. F. (1959). Cultural, behavioral, and ecological perspectives in the study of social organization, *Amer. J. Sociol.*, 65, pp. 132-46; Schnore, L. F. (1958). Social morphology and human ecology, *Amer. J. Sociol.*, 63, pp. 620-34. For a critique of the Theory of the

- Ecological Complex, see Willhelm, S. M. (1964). The concept of the "ecological complex": a critique, *Amer. J. Econ. and Sociol.*, 23, pp. 241-8.
- 43 Duncan, O. D. (1959). p. 683.
- 44 Duncan, O. D. and Schnore, L. F. (1959). *op. cit.* p. 138.
- 45 Sjoberg, G. (1965). Theory and research in urban sociology, in Hauser, P. M. and Schnore, L. F. *op. cit.* p. 166.
- 46 Wheatley, P. (1967). Proleptic observations on the origins of urbanism, in Steel, R. W. and Lawton, R. (eds.). *Liverpool Essays in Geography. A Jubilee Collection*. London. pp. 315-45; Wheatley, P. (1971). *The Pivot of the Four Quarters. A Preliminary Enquiry into the Origins and Character of the Ancient Chinese City*. Edinburgh and Chicago.
- 47 Gibbs, J. P. and Martin, W. T. (1959). Toward a theoretical system of human ecology, *Pacific Sociol. Rev.*, 2, pp. 29-36; Gibbs, J. P. and Martin, W. T. (1962). Urbanization, technology and the division of labour: international patterns, *Amer. Sociol. Rev.*, 27, pp. 667-77. In this latter paper, the authors propound the following propositions, which are sufficiently indicative of the scope and direction of their work:
- IA The degree of urbanization in a society varies directly with the division of labour;
 - IB The division of labour in a society varies directly with the dispersion of objects of consumption . . .
 - IIA The degree of urbanization in a society varies directly with technological development;
 - IIB Technological development in a society varies directly with the dispersion of objects of consumption.
- 48 Gibbs, J. P. and Martin, W. T. (1962). *op. cit.* p. 672.
- 49 Reissman, L. (1964). *op. cit.* p. 120.
- 50 Wirth, L. (1938). Urbanism as a way of life, *Amer. J. Sociol.*, 44, p. 8. A similar deductive argument had been advanced by Simmel at least as early as 1908, except that he had used social rather than ecological characteristics as the basis from which to derive psychological features: Simmel, G. *The metropolis and mental life*. Reprinted in Wolff, K. H. (1950). *The Sociology of Georg Simmel*. Glencoe, Ill. Cp. also Davis who followed Wirth's model more closely: Davis, K. (1948). *Human Society*. New York.
- 51 Wirth, L. (1938). *op. cit.* p. 13.
- 52 Bascom, W. (1955). Urbanization among the Yoruba, *Amer. J. Sociol.*, 60, pp. 446-54.
- 53 Krapf-Askari, E. (1969). *Yoruba Towns and Cities. An Enquiry into the Nature of Urban Social Phenomena*. Oxford. p. 157.
- 54 Duncan, O. D. (1957). *op. cit.*
- 55 Reiss, Jr., A. J. (1955). An analysis of urban phenomena, in Fisher, R. M. (ed.) *The Metropolis in Modern Life*. New York. p. 43. It is true, though, that Dewey, R. (1960). *op. cit.* pp. 63-4, like Bascom, W. (1955). *op. cit.* and Krapf-Askari, E. (1969). *op. cit.*, has taken the opposite view: ". . . it is probably futile to argue for the abandonment of the terms "rural" and "urban" as indicators of size and density of population. There is little, if any, evidence that the established usage of these words is in process of change: their abandonment would require the invention of a new pair of terms to denote the large, densely associated communities, distinguished from the small and sparsely settled groups of the world." Yet the fact remains that the use of these terms in analytic investigations is subverted by an almost complete absence of quantitative empirical confirmation.
- It may be remarked parenthetically that the term "urban" has sometimes been applied to settlements such as those of the Classic Maya, of Classical Cambodia, of China prior to the Spring-and-Autumn period, Athens prior to 431 B.C., and Etruscan Rome, which were not characterized by high

- densities of population at their core. Such settlements have been termed "extended boundary towns" by Miles, S. W. (1958): An urban type: extended boundary towns, *S. W. J. Anthropol.*, 14, pp. 339-51, and "synchorite urban settlements" by Rowe, J. H. (1963). Urban settlements in ancient Peru, *Nawpa Pacha*, 1, p. 3. For the possibility that such settlements represent a functional and developmental stage of urban evolution, see Wheatley, P. (1971). *op. cit.* Ch. 3.
- 56 As Krapf-Askari, E. (1969). *op. cit.* p. 22 points out, the Wirthian model looks back beyond Durkheim to Rousseau; "it is redolent with suppressed nostalgia for a subjacent 'integrated society' in which contacts were personal, deep, permanent, and involved the whole person. Even *anomie* implies that a *nomos* has, somewhere along the way, been lost." In America this point of view found powerful proponents in, among others, Jefferson, Emerson and Dewey: cf. White, M. and L. (1962). *The Intellectual versus the City*. Cambridge, Mass.
- 57 Wirth, L. (1938). *op. cit.* p. 18.
- 58 These characteristics implicit in Wirth's formulation are here listed as summarized by Dewey, R. (1960). *op. cit.* pp. 61-2.
- 59 Wirth, L. (1938). *op. cit.* p. 9.
- 60 Weber, M. (1921: cited in 1925 reprint). *Grundriss der Sozialökonomik, III. Abteilung, Wirtschaft und Gesellschaft*, 2. Halbband. Tübingen. p. 523. For an "Americanized" adaptation of Weber's definition see Munro, W. B. (1926). *The Government of American Cities*. New York. p. 13.
- 61 The city-state appears to represent a developmental phase of socio-political organization in which, it is true, the city exercises the sovereign powers of a state government. But this type of city constitutes a special case, coming as it does at that extremity of the spectrum of political dependence at which the territory of the city is coincident with that of the state. The German *Freistädte* and some Italian cities towards the end of the Middle Ages (when the authority of the German Emperor had become merely nominal in Italy) have sometimes been classed as quasi-sovereign, but such clearly do not represent a developmental phase, and should more properly be classed among those cities to which some degree of autonomy has fallen accidentally.
- 62 The three instances of wholly privileged cities mentioned in the text are discussed in Gonthier, A. (1954). Les villes japonaises. Histoire des institutions administratives et judiciaires, *Recueils de la Société Jean Bodin* (Bruxelles), 6, pp. 241-8; Gonthier, A. (1957). Le droit privé urbain au Japon, *Recueils de la Société Jean Bodin*, 8, pp. 111-14; Pirenne, J. (1956). Les institutions urbaines dans l'ancienne Egypte et dans le pays de Sumer, *Recueils de la Société Jean Bodin*, 6, pp. 27-48; Pirenne, J. (1957). Le droit privé dans l'ancienne Egypte, *Recueils de la Société Jean Bodin*, 8, pp. 25-44; Préaux, C. (1956). Les villes hellénistiques, principalement en Orient. Leurs institutions administratives et judiciaires, *Recueils de la Société Jean Bodin*, 6, pp. 69-134. Concerning the varying status of the Hellenistic city see also Jones, A. H. M. (1940). *The Greek City from Alexander to Justinian*. Oxford.
- 63 Weber, M. (1921). *Wirtschaft und Gesellschaft*, p. 523. For a critical summary of Weber's conception of the non-European city see Eisenstadt, S. N. (1955). Social problems of urban organization and planning in underdeveloped countries, *Atti del Congresso Internazionale di Studio sul Problema delle Aree arretrate*, 2, pp. 887-900.
- 64 Cf. Polanyi, K., Arensberg, C. M. and Pearson, H. W. (eds.), (1957). *Trade and Market in the Early Empires*. Glencoe, Ill. For a comprehensive, though highly critical, survey of the discussions provoked by this book see Cook, S. (1966). The obsolete "anti-market" mentality: a critique of the

630 *Part III Section I Development and characteristics of urbanism*

- substantive approach to economic anthropology, *Amer. Anthropol.*, 68, pp. 323-45.
- 65 Childe, V. G. (1950). The urban revolution, *Town Planning Review*, 21, pp. 9-16. The process of urban genesis as Childe envisaged it in Mesopotamia is treated in more detail in Childe, V. G. (1952). *New Light on the Most Ancient East*. London. Chap. 7.
- 66 In its anthropomorphic manifestations representational art may have been a result either of the crystallization of social stratification or of the elaboration of a religious tradition. The former would appear to have been the case in early Mesopotamia where gods—or, at least, recognizably anthropomorphized deities—were portrayed at a somewhat later date than human figures. In the mural art of Teotihuacán, by contrast, gods appear to have been portrayed at least as early as, and probably prior to, the representation of men. In Shang China animal forms seem, on present evidence, to have preceded the portrayal of men, and there are no recognizable depictions of deities. Generally speaking, rather than an index of urbanism, representational art would seem, like urbanism itself, to be merely one specific phenomenon within the inclusive category of civilization.
- 67 In Mesoamerica only limited forms of writing developed so that these societies are perhaps categorized most appropriately as oligo-literate.
- 68 Rowe, J. H. (1963). Urban settlements in ancient Peru, *Nawpa Pacha*, 1 p. 3.
- 69 Rowe, J. H. (1963). *Ibid.*
- 70 Kenyon, K. M. (1957). *Digging up Jericho: the Results of the Jericho Excavations 1952-1956*. New York. pp. 65-6.
- 71 Smailes, A. E. (1944). The urban hierarchy in England and Wales, *Geogr.*, 29, pp. 41-51.
- 72 Dickinson, R. E. (1932). The distribution and functions of the smaller urban settlements in East Anglia, *Geogr.*, 7, pp. 19-31.
- Exigencies of space prohibit discussion of the numerous classifications of cities which might appropriately be included in this section, but the following references would provide an introduction to what has become a very extensive literature: Harris, C. D. (1943). A functional classification of cities in the United States, *Geogr. Rev.*, 33, pp. 86-99; Steigenga, W. (1955). A comparative analysis and a classification of Netherlands towns, *Tijdschrift voor Economische en Sociale Geografie*, 46, pp. 106-12; Pownall, L. L. (1953). The functions of New Zealand towns, *Ann. Assoc. Amer. Geogr.*, 43, pp. 332-50; Nelson, H. J. (1955). A service classification of American cities, *Econ. Geogr.*, 31, pp. 189-210; Smith, R. H. (1965). Method and purpose in functional town classification, *Ann. Assoc. Amer. Geogr.*, 55, pp. 539-48; Moser, C. A. and Scott, W. (1961). *British Towns*. London; Alexander, J. W. (1954). The basic-nonbasic concept of urban economic functions, *Econ. Geogr.*, 30, pp. 246-61; Alexandersson, G. (1956). *The Industrial Structure of American Cities*. Lincoln, Neb.; Andrews, R. B. (1953-56). Mechanics of the urban economic base, *Land Economics*, 29, pp. 161-7, 263-8, 343-9; 30, 52-60, 164-73, 260-9, 309-19; 31, 47-53, 69-84; (Reprinted in Pfouts, R. W. (ed.) (1960). *The Techniques of Urban Economic Analysis*. New York. pp. 6-17, 40-183; Ullman, E. L. and Dacey, M. F. (1960). The minimum requirements approach to the urban economic base, *Lund Studies in Geography, Series B, Human Geography*, 24, pp. 121-43; Isard, W. and Kavesch, R. (1954). Economic structural interrelations of metropolitan regions, *Amer. J. Sociol.*, 60, pp. 152-62.
- 73 Miner, H., (ed.) (1967). *The City in Modern Africa*. New York. pp. 5-10. For the concept of dominance Miner refers to Amos H. Hawley's discussion of the term in (1950). *Human Ecology. A Theory of Community Structure*. New York. p. 221. Cf. esp.: "Dominance attaches to the unit that controls the conditions necessary to the functioning of other units. Ordinarily that

means controlling the flow of sustenance into the community. Any alteration of the sustenance flow requires immediate readjustment on the part of all other units. Such influence may be exercised directly or indirectly through control over the allocation of space to different activities, the determination of who shall be employed, the regulation of credit, the censoring of news and information reaching the community, and in many other ways".

The notion of the city as a centre of dominance had been implicit in the writings of numerous earlier authors ranging in time at least from Ibn Khaldūn in the fourteenth century A.D. and Giovanni Botero in the sixteenth century, to Donald Bogue (1949). *The Structure of the Metropolitan Community: a Study of Dominance and Subdominance*. Ann Arbor. Miner, however, as far as I have been able to ascertain, was the first to give the concept formal expression.

- 74 Miner, H. (ed.) (1967). *op. cit.* pp. 6-8.
- 75 Friedmann, J. (1961). Cities in social transformation, *Comparative Studies in Society and History*, 4, p. 92. The author has further elaborated the concept of "effective space" in Friedmann, J. (1961). L'influence de l'intégration du système social sur le développement économique, *Diogenes*, 33, pp. 80-104, and applied it to problems of development in preprints of two papers so far unpublished: Friedmann, J. (1969). A general theory of polarized development. School of Architecture and Urban Planning University of California at Los Angeles [mimeo.] Friedmann, J. *et al.* (1970). Urbanization and national development: a comparative analysis. School of Architecture and Urban Planning, UCLA [mimeo].
- 76 Harris, C. D. and Ullmann, E. L. (1945). The nature of cities, *Ann. Amer. Acad. Political and Social Science*, 242, pp. 7-17. The term "central place" is apt because, to provide anything like comprehensive services with maximum efficiency, a city must be located close to the point of minimum aggregate travel within its tributary area. The term was introduced into American geography by R. S. Platt (personal communication from Norton S. Ginsburg).
- 77 Lalanne, L. (1863). Essai d'une théorie des réseaux de chemin de fer, fondée sur l'observation des faits et sur les lois primordiales qui président au groupement des populations, *Comptes Rendus Hebdomadaires des Séances de l'Académie des Sciences*, 42, pp. 206-10.
- 78 Galpin, C. J. (1915). *The Social Anatomy of an Agricultural Community*. Research Bulletin 34, Agricultural Experiment Station of the University of Wisconsin. Madison.
- 79 Christaller, W. (1933). *Die zentralen Orte in Süddeutschland: Eine ökonomisch-geographische Untersuchung über die Gesetzmässigkeit der Verbreitung und Entwicklung der Siedlungen mit städtischen Funktionen*. Jena.
- 80 I.e., assuming a uniform distribution of population and purchasing power, uniform terrain and resource distribution, and equally developed transport facilities in all directions.
- 81 See Hilbert, D. and Cohn-Vosson, S. (1957). *Geometry and the Imagination*. New York. p. 35.
- 82 K in hierarchies based on the marketing principle = the bifurcation ratio k for central places + one; that is, it refers to the number of settlements at a given level in the hierarchy served by a central place at the next higher level.

A statement of the simplest model of a hierarchy of cities in mathematical form has been provided by Beckmann, M. J. (1958). City hierarchies and the distribution of city size, *Econ. Development and Cultural Change*, 6, pp. 243-8; and Prost has compared the model with results obtained empirically by Christaller in Germany: Prost, M-A (1965). *La Hiérarchie des Villes*. Paris. pp. 70-4. As early as 1931 W. J. Reilly advanced a "Law

of Retail Gravitation" which included a formula providing a ready approximation of the extent of market areas: Reilly, W. J. (1931). *The Law of Retail Gravitation*. New York.

- 83 Lösch, A. (1944). *Die räumliche Ordnung der Wirtschaft*. Jena. Cf. also Valavanis, S. (1955). Lösch on location, *Amer. Econ. Rev.*, 45, pp. 637-44; Nourse, H. O. (1968). *Regional Economics*. New York. Thompson, A. C. (1970). Some comments on Lösch, *Geogr. Analysis*, 2, pp. 397-400, has criticized Lösch's basic assumption that establishments normally exist at their thresholds, and proposed an alternative solution, which he claims is more consonant with empirical findings. According to the Löschian analysis, in a state of saturation establishments are of minimum possible scale with their demand curves tangential to their long-run average-cost curves. In Thompson's solution, however, the demand curve of each establishment is tangential to its short-run average-cost curve, but above its long-run average-cost curve, so that establishments generally exceed the minimum possible scale.
- 84 Bogue has discerned similar sectors in a study of population densities around the 67 largest metropolitan centres in the U.S.A. The hinterland of each metropolis was found to comprise three types of sector: *route* sectors containing a major highway, *subdominant* sectors each of which contained one city of 25,000 or more inhabitants, and *local* sectors which constituted the rest. Urban densities proved to be highest in the subdominant sectors, lower than might have been expected in the route sectors, and well below both in the local sectors. See Bogue, D. J. (1949). *op. cit.*
- 85 During the past thirty years there has been considerable debate as to whether the settlements of a region are disposed in an orderly manner among size categories as is implicit in Christaller's hypothesis or, alternatively, are ranged along a continuum. The latter distribution, which can be made conformable with a variety of explanatory hypotheses, has been generalized by Zipf as the Rank-Size Rule

$$r \cdot P^q = K$$

where q (which approximates to unity) and K are constants for a given group of cities, and P is the population of a particular city of rank r in the descending array of settlements. Simply stated this means the size of the n th city in the hierarchy approximates one- n th the size of the largest city. The distribution underlying this rule can be regarded as lognormal and obeying the law of proportionate effect. Although the rule is essentially an empirical finding rather than a theoretical proposition, Beckmann has been able to show that with the addition of a random variable the discrete size categories of Christaller's hierarchy merge into a virtual rank-size distribution. There is still some doubt as to the precise significance of the several forms of city-size distribution, but Simon's suggestion that rank-size regularities are generated by some stochastic process has gained considerable favour. In testing the hypothesis for the distribution of city sizes in the state of Washington, U.S.A., Berry and Garrison found a reasonably close agreement between observed and predicted frequency distributions. Berry has subsequently argued that rank-size (lognormal) distributions are typical of areally extensive countries with long traditions of urbanism in economically and politically complex contexts. Primate distributions, in which a stratum of small urban forms is dominated by one or more very large cities, by contrast, are allegedly characteristic of small countries recently urbanized and with relatively simple political and economic institutions. However, just under a quarter of the thirty-eight countries studied yielded intermediate distributions. and the classification of several in the two main groups can be justified only by invoking the operation of an array of cultural and historical factors. The presence of Korea and El Salvador in the first group and of Thailand

Uruguay and Denmark in the second are especially intractable features of the classification.

For general discussions of the points touched on above see: Auerbach, F. (1913). *Das Gesetz der Bevölkerungskonzentration*, *Petermanns Mitteilungen*, 59, 74-6; Zipf, G. K. (1949). *Human Behaviour and the Principle of Least Effort*. Cambridge, Mass.; Allen, G. R. (1954). The "Courbes des Populations": a further analysis, *Bull. Oxford Univ. Inst. Statistics*, 16, pp. 179-89; Vining, R. (1955). A description of certain spatial aspects of an economic system, *Econ. Development and Cultural Change*, 3, pp. 147-95; Stewart, C. T. (1958). The size and spacing of cities, *Geogr. Rev.*, 48, pp. 222-45; Simon, H. A. (1955). On a class of skew distribution functions, *Biometrika*, 42, pp. 425-440; Berry, B. J. L. and Garrison, W. (1958) Alternate [sic] explanations of urban rank-size relationships, *Ann. Assoc. Amer. Geogr.*, 48, pp. 83-91; Berry, B. J. L. (1961). City size distributions and economic development, *Econ. Development and Cultural Change*, 9, pp. 573-88; Beckmann, M. J. (1958). *op. cit.* Cf. also Berry, B. J. L. (1964). Cities as systems within systems of cities, *Papers and Proceedings of the Regional Science Assoc.*, 13, pp. 147-63.

- 86 This is the view of Von Böventer, E. (1962). Towards a unified theory of spatial economic structure, *Papers of the Regional Science Association*, 10, pp. 163-87. However, Tinbergen's model of market-oriented location, developed on an isotropic plain and minimizing total costs of production and transport, generates a tiered hierarchy not dissimilar from that of Christaller. See Tinbergen, J. (1961). The spatial dispersion of production: an hypothesis, *Schweizerische Zeitschrift für Volkswirtschaft und Statistik*, 97, pp. 412-19; Tinbergen, J. (1964). Sur un modèle de la dispersion géographique de l'activité économique, *Rev. d'Economie Politique*, 74, pp. 30-44.
- 87 Recent papers dealing with the geometry of Central-Place Theory and mixed hierarchies include: Dacey, M. F. (1965). The geometry of Central-Place Theory, *Geografiska Annaler*, 47B, pp. 111-24; Hudson, J. C. (1967). An algebraic relation between the Lösch and Christaller central place networks, *Professional Geographer*, 19, pp. 133-5; Woldenberg, M. J. (1967). The identification of mixed hexagonal central place hierarchies with examples from Finland, Germany, Ghana and Nigeria, *Harvard Papers in Theoretical Geography*. Paper No. 5 in the series *Geography and the Properties of Surfaces*. For general comments on recent theoretical departures see Berry, B. J. L. (1967). *Geography of Market Centers and Retail Distribution*. Englewood Cliffs, N. J.
- 88 Curry, L. (1962). The geography of service centres within towns: the elements of an operational approach, *Lund Studies in Geography, Series B, Human Geography*, 24, pp. 31-53.
- 89 Christaller, W. (1933). *op. cit.* p. 3.
- 90 Cf. Polanyi, K., Arensberg, C. M. and Pearson, H. W. (eds.) (1957). *Trade and Market in the Early Empires*. Glencoe, Ill.; Cook, S. (1966). The obsolete "anti-market" mentality: a critique of the substantive approach to economic anthropology, *Amer. Anthropol.*, 68, pp. 323-45.
- 91 Parsons, T. and Smelser, N. J. (1956). *Economy and Society. A Study in the Integration of Economic and Social Theory*. London.
- 92 Berry, B. J. L. and Garrison, W. L. (1958). Recent developments of Central-Place Theory, *Papers and Proceedings of the Regional Science Association*, 4, pp. 107-20. The operational use of the restated theory is demonstrated by Berry, B. J. L. (1959). Ribbon developments in the urban business pattern, *Ann. Assoc. Amer. Geogr.*, 49, pp. 145-55.
- 93 Thomas, E. N. (1961). Towards an expanded central place model, *Geogr. Rev.*, 51, pp. 400-11; Thomas, E. N. (1962). The stability of distance-population-size relationships for Iowa towns from 1900-50, *Lund Studies*

- in *Geography, Series B, Human Geography*, 24, pp. 13-30; Thomas, E. N. (1962). The spatial behavior of a dispersed non-farm population, *Papers and Proceedings of the Regional Science Assoc.*, 8, pp. 107-33; Thomas, E. N. (1964). The comparative spatial behaviour of two dispersed populations, *J. Regional Science*, 4.
- 94 Dacey, M. F. (1966). A probability model for central place location, *Ann. Assoc. Amer. Geogr.*, 56, pp. 550-568. Cp. especially p. 568: "(1) a displaced central place model describes the Iowa urban pattern though the Iowa pattern is in a strong state of disequilibrium, or (2) the utility of this stochastic interpretation of central-place theory is limited to description of the urban pattern but has no explanatory implications to the locational process underlying the urban pattern. The present analysis does not permit the objective evaluation of the relative merits of these two contradictory conclusions".
- 95 Clarkson, G. P. E. (1963). *The Theory of Consumer Demand: a Critical Appraisal*. Englewood Cliffs, N.J.
- 96 Harvey, D. (1969). *Explanation in Geography*. London. pp. 138-9; Dacey, M. F. (1966). *op. cit.* p. 550, had already pointed out that the theory as explicated by Christaller and Lösch was algebraic, and hence deterministic rather than probabilistic; that because it did not allow for deviations from precisely stated relations and locations, there was no chance of accumulating evidence verifying the theory.
- 97 Cp. *int. al.*, Skinner, G. W. (1964). Marketing and social structure in rural China. Part I, *J. Asian Studies*, 24, p. 31. On succeeding pages Skinner discusses the social dimensions of Chinese marketing systems.
- 98 Von Grünebaum, G. E. (1962). The sacred character of Islamic cities *Mélanges Tāhā Husain: offerts par ses Amis et ses Disciples à l'occasion de son 70ième anniversaire*. Cairo. pp. 25-37, especially p. 27.
- 99 This principle was enunciated and elaborated in its classic form by Ratcliff R. U. (1949). *Urban Land Economics*. New York. The operation of the urban land-market has been partially elucidated by Alonso, W. (1960). A theory of the urban land-market, *Papers and Proceedings of the Regional Science Association*, 6, pp. 149-57, and Wingo, L. (1961). *Transportation and Urban Land*. Washington, D.C. Cf. also Haggert, P. (1968). The spatial structure of city regions, *Quarterly Bull., Research and Intelligence Unit, Greater London Council*, 4, pp. 28-34.
- 100 Burgess, E. W. (1924). The growth of the city: an introduction to a research project, *Publications of the Amer. Sociol. Soc.*, 18, pp. 85-97. Reprinted in Park, R. E., Burgess, E. W. and McKenzie, R. D. (1925). *The City*. Chicago. pp. 47-62. See also Quinn, J. A. (1940). The Burgess zonal hypothesis and its critics, *Amer. Sociol. Rev.*, 5, pp. 210-18; Alihan, M. A. (1938). *Social Ecology: a Critical Analysis*. New York. pp. 224-225; Davie, M. R. (1937). The pattern of urban growth, in Murdock, G. P. (ed.). *Studies in the Science of Society*. New Haven. pp. 133-161; Schnore, L. F. (1965). On the spacial structure of cities in the two Americas, in Hauser, P. M. and Schnore, L. F. *op. cit.* pp. 349-56. For partial explanations of the concentric arrangement in terms of the substitution of rents for transport costs, see Berry, B. J. L. (1959). Section in Garrison, W., Berry, B. J. L., Marble, D. F., Nystuen, J. D., and Morrill, R. L. *Studies of Highway Development and Geographic Change*. Seattle; Isard, W. (1956). *Location and Space-economy. A General Theory Relating to Industrial Location, Market Areas, Land Use, Trade, and Urban Structure*. Cambridge, Mass. pp. 200-6. Alonso, W. (1960). *op. cit.* and Wingo, L. (1961). *op. cit.* have partially elucidated the rationale in the concentric model of the poor living on land of high value close to the city centre and the rich living on cheaper land at the periphery. If the theories of the Chicago School of urban ecologists be thought of as representing the confluence of streams of thought deriving

from nineteenth-century Social Darwinism and Classical Economics, it is not surprising that their authors should have attempted to explain human action in terms of impersonal competition in either its economic (Burgess) or social (Park) manifestations.

- 101 Hoyt, H. (1939). *The Structure and Growth of Residential Neighborhoods in American Cities*. Washington, D.C.
- 102 Harris, C. D. and Ullman, E. L. (1945). The nature of cities, *Ann. Amer. Acad. Political and Social Science*, 242, pp. 7-17.
- 103 Marble, D. F. (1959). Section in Garrison, W., Berry, B. J. L., Marble, D. F., Nystuen, J. D., and Morrill, R. L. *op. cit.* The spread of housing during the past twenty-five years in an area to the south of Cambridge has been adduced as evidence from England tending to support Marble's interpretation of American data. Cf. Haggett, P. (1965). *Locational Analysis in Human Geography*. London. pp. 180-1. See also King, L. J. (1967). Discriminatory analysis of urban growth patterns in Ontario and Quebec, 1951-61, *Ann. Assoc. Amer. Geogr.*, 57, pp. 566-78.
- 104 This relationship is usually generalized as
- $$P_d = P_0 e^{-gd}$$
- where P_d is the population density at distance d from the centre of the city; $-g$ is the slope of the density decline curve, and P_0 is the density of the central area as extrapolated from the slope for outer areas. See Clark, C. (1951). Urban population densities, *J. Royal Statistical Soc., Series A*, 114, pp. 490-6; Clark C. (1958). Urban population densities, *Bull. Institut International de Statistique*, 36, pp. 60-68; Tanner, J. C. (1961). Factors affecting the amount of travel, *Road Research Technical Paper No. 51*. Department of Scientific and Industrial Research, London; Sherratt, G. G. (1960). A model for general urban growth, *Management Sciences, Models and Techniques. Proceedings of the Sixth International Meeting of the Institute of Management Sciences*, 2. New York. pp. 147-59. In this paper Sherratt suggests that urban population densities decline exponentially as the square of distance such that
- $$D_d = D_0 e^{-cd^2}$$
- where D is the population density at distance d from the centre of the city, D_0 is the density at the centre of the city, and $-c$ is a measure of the rate of change of the logarithm of density with distance squared; Berry, B. J. L., Simmons, J. W., and Tennant, R. J. (1963). Urban population densities: structure and change, *Geogr. Rev.*, 53, pp. 389-405; Casetti, E. (1967). Urban population density patterns: an alternate [*sic*] explanation, *Canadian Geogr.*, 11, pp. 96-100. Recently B. Newling has used a quadratic exponential model to derive a density-profile classification of stages of urban growth: Newling, B. E. (1969). The spatial variation of urban population densities, *Geogr. Rev.*, 59, pp. 242-52.
- 105 Berry, B. J. L., Simmons, J. W. and Tennant, R. J. (1963). *op. cit.* pp. 389-405; Berry, B. J. L., Tennant, R. J., Garner, B. J. and Simmons, J. W. (1963). *Commercial Structure and Commercial Blight*. University of Chicago, Department of Geography, Research Paper 85.
- 106 Muth, R. F. (1962). The spatial structure of the housing market, *Papers and Proceedings of the Regional Science Association*, 7, pp. 207-20.
- 107 Winsborough, H. H. (1962). City growth and city structure, *Regional Science*, 4, pp. 35-49.
- 108 e.g. Proudfoot, M. J. (1937). City retail structure, *Econ. Geogr.*, 13, pp. 425-8; Mayer, H. (1942). Patterns and recent trends of Chicago's outlying business centres, *J. Land and Public Utility Economics*, 18, pp. 4-16; Kelley, E. J. (1956). *Shopping Centres*. Saugatuck, Conn.
- 109 Berry, B. J. L. (1959). Ribbon developments in the urban business pattern, *Ann. Assoc. Amer. Geogr.*, 49, pp. 145-55. Perhaps it should be noted that this idea had already been propounded in less formalized terms by Louis

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- 110 Numerous references to studies of the internal structure of Japanese cities are to be found in a report commissioned by the *Nihon Chirigakkai* (Association of Japanese Geographers) and entitled *Toshika Kenkyū Shiryō* (*Research Materials on Urbanization*), 1959. There is also a comprehensive and up-to-date review of Japanese urban geography by Ginsburg, N. S. (1965), Urban geography and "Non-Western" areas, in Hauser, P. M. and Schnore, L. F., *op. cit.* pp. 319-27.
- 111 Representative of such works in three different culture realms are the chapters on Ibadan and Lagos in Mabogunje, A. L. (1968). *Urbanization in Nigeria*. London; McGee, T. G. (1967). *The South-east Asian City*. London; Singh, R. L. (1955). *Banaras: a Study in Urban Geography*. Banaras; Berry, B. J. L. and Rees, P. H. (1969). The factorial ecology of Calcutta, *Amer. J. Sociol.*, 74, pp. 445-91; Prakasa Rao, V. L. S. (1962). Macro-urban analysis: geographers' contribution. Presidential Address to the Council of Geographers (India), *Annual Proceedings*. Cuttack [mimeo].; Kar, N. S. (1962). Urban hierarchy and central functions around Calcutta, in Lower West Bengal, India, and their significance, *Lund Studies in Geography, Series B, Human Geography*, 24; Liang, Chi-sen, (1966). Urban land-use in Hong Kong and Kowloon, *Chung Chi J.*, 6, pp. 1-24, 8, 107-32; Liang, Chi-sen (in progress). *The Factorial Ecology of Hong Kong*.
- 112 See Wheatley, P. (1969). *City as Symbol*. London: Wheatley, P. (1970). The significance of traditional Yoruba urbanism, *Comparative Studies in Society and History*, 12, pp. 393-423, esp. p. 421.
- 113 There is a preliminary discussion of the bazaar economy of the traditional world in Sjoberg, G. (1960). *The Preindustrial City*. Glencoe, Ill. pp. 204-9, and detailed analyses from two different points of view in Geertz, C. (1963). *Peddlers and Princes. Social Change and Economic Modernization in two Indonesian Towns*. Chicago and London. pp. 30-47, and Darwent, D. F. (1967). Towards a general theory of urban development in the Middle East, *Aspects of Central Place Theory and the City in Developing Countries*. Institute of British Geographers Study Group in Urban Geography. Durham Conference. No pagination.
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- 115 Grytzell, K. G. (1963). The demarcation of comparable city areas by means of population density, *Lund Studies in Geography, Series B, Human Geography*, 25,
- 116 Office of Statistical Standards (1958). *Criteria for Defining Standard Metropolitan Areas*. Washington, D.C.
- 117 International Urban Research (1959). *The World's Metropolitan Areas*. Berkeley and Los Angeles. pp. 20-31.
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- 119 My attention was first drawn to the implications of this turn of phrase by Miner, H. (1967). *op. cit.* p. 4.

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- 126 See Krapf-Askari, E. (1969). *op. cit.* pp. 25-26; Wheatley, P. (1970). *op. cit.*
- 127 Reiss, Jr., A. J. (1957). "Introduction" to Hutt, P. K. and Reiss, Jr., A. J. *Cities and Society. The Revised Reader in Urban Sociology*. Glencoe, Ill. p. 10.