The Urbanization of the Human Population

As the population of the world increases, the proportion of people in cities increases at a higher rate. More than half of the world's people will probably be living in cities of 100,000 or more by 1990.

by Kingsley Davis

Urbanized societies, in which a majority of the people live crowded together in towns and cities, represent a new and fundamental step in man's social evolution. Although cities themselves first appeared some 5,500 years ago, they were small and surrounded by an overwhelming majority of rural people; moreover, they relapsed easily to village or small-town status. The urbanized societies of today, in contrast, not only have urban agglomerations of a size never before attained but also have a high proportion of their population concentrated in such agglomerations. In 1960, for example, nearly 52 million Americans lived in only 16 urbanized areas. Together these areas covered less land than one of the smaller counties (Cochise) of Arizona. According to one definition used by the U.S. Bureau of the Census, 96 million people—53 percent of the nation's population—were concentrated in 213 urbanized areas that together occupied only 7 percent of the nation's land. Another definition used by the bureau puts the urban population at about 70 percent. The large and dense agglomerations comprising the urban population involve a degree of human contact and of social complexity never before known. They exceed in size the communities of any other large animal; they suggest the behavior of communal insects rather than of mammals.

Neither the recent nor the speed of this evolutionary development is widely appreciated. Before 1850 no society could be described as predominantly urbanized, and by 1900 only one—Great Britain—could be so regarded. Today, only 65 years later, all industrial nations are highly urbanized, and in the world as a whole the process of urbanization is accelerating rapidly.

Some years ago my associates and I at Columbia University undertook to document the progress of urbanization by compiling data on the world's cities and the proportion of human beings living in them; in recent years the work has been continued in our center—International Population and Urban Research—at the University of California at Berkeley. The data obtained in these investigations are reflected in the illustration on the next two pages, which shows the historical trend in terms of one index of urbanization: the proportion of the population living in cities of 100,000 or larger. Statistics of this kind are only approximations of reality, but they are accurate enough to demonstrate how urbanization has accelerated. Between 1850 and 1950 the index changed at a much higher rate than from 1800 to 1850, but the rate of change from 1950 to 1960 was twice that of the preceding 50 years! If the pace of increase that obtained between 1950 and 1960 were to remain the same, by 1990 the fraction of the world's people living in cities of 100,000 or larger would be more than half. Using another index of urbanization—

In discussing the trend—and its implications insofar as they can be perceived—I shall use the term urbanization in a particular way. It refers here to the proportion of the total population concentrated in urban settlements, no less or more than this proportion. A common mistake is to think of urbanization as simply the growth of cities. Since the total population is composed of both the urban population and the rural, however, the "proportion urban" is a function of both of them. Accordingly cities can grow without any urbanization, provided that the rural population grows at an equal or a greater rate.

Historically urbanization and the growth of cities have occurred together, which accounts for the confusion. As the reader will soon see, it is necessary to distinguish the two trends. In the most advanced countries today, for example, urban populations are still growing, but their proportion of the total population is tending to remain
stable or to diminish. In other words, the process of urbanization—the switch from a spread-out pattern of human settlement to one of concentration in urban centers—is a change that has a beginning and an end, but the growth of cities has no inherent limit. Such growth could continue even after everyone was living in cities, through sheer excess of births over deaths.

The difference between a rural village and an urban community is of course one of degree; a precise operational distinction is somewhat arbitrary, and it varies from one nation to another. Since data are available for communities of various sizes, a dividing line can be chosen at will. One convenient index of urbanization, for example, is the proportion of people living in places of 100,000 or more. In the following analysis I shall depend on two indexes: the one just mentioned and the proportion of population classified as “urban” in the official statistics of each country. In practice the two indexes are highly correlated; therefore either one can be used as an index of urbanization.

Actually the hardest problem is that of determining the “floor” of the urban category but of ascertaining the boundary of places that are clearly urban by any definition. How far east is the boundary of Los Angeles? Where along the Hooghly River does Calcutta leave off and the countryside begin? In the past the population of cities and towns has usually been given as the number of people living within the political boundaries. Thus the population of New York is frequently given as around eight million, this being the population of the city proper. The error in such a figure was not large before World War I, but since then, particularly in the advanced countries, urban populations have been spilling over the narrow political boundaries at a tremendous rate. In 1960 the New York–Northeastern New Jersey urbanized area, as delineated by the Bureau of the Census, had more than 14 million people. That delineation showed it to be the largest city in the world and nearly twice as large as New York City proper.

As a result of the outward spread of urbanites, counts made on the basis of political boundaries alone underestimate the city populations and exaggerate the rural. For this reason our office delineated the metropolitan areas of as many countries as possible for dates around 1950. These areas included the central, or political, cities and the zones around them that are receiving the spillover.

This reassessment raised the estimated proportion of the world’s population in cities of 100,000 or larger from 15.1 percent to 16.7 percent. As of 1960 we have used wherever possible the “urban agglomeration” data now furnished to the United Nations by many countries. The U.S., for example, provides data for “urbanized areas,” meaning cities of 50,000 or larger and the built-up agglomerations around them.

It is curious that thousands of years elapsed between the first appearance of small cities and the emergence of urbanized societies in the 19th century. It is also curious that the region where urbanized societies arose—northwestern Europe—was not the one that had given rise to the major cities of the past; on the contrary, it was a region where urbanization had been at an extremely low ebb. Indeed, the societies of northwestern Europe in medieval
times were so rural that it is hard for modern minds to comprehend them. Perhaps it was the nonurban character of these societies that erased the parastic nature of towns and eventually provided a new basis for a revolutionary degree of urbanization.

At any rate, two seemingly adverse conditions may have prefigured the age to come: one the low productivity of medieval agriculture in both per-acre and per-man terms, the other the feudal social system. The first meant that towns could not prosper on the basis of local agriculture alone but had to trade and to manufacture something to trade. The second meant that they could not gain political dominance over their hinterlands and thus become warring city-states. Hence they specialized in commerce and manufacture and evolved local institutions suited to this role. Craftsmen were housed in the towns, because there the merchants could regulate quality and cost. Competition among towns stimulated specialization and technological innovation. The need for literacy, accounting skills and geographical knowledge caused the towns to invest in secular education.

Although the medieval towns remained small and never embraced more than a minor fraction of each region's population, the close connection between industry and commerce that they fostered, together with their emphasis on technique, set the stage for the ultimate breakthrough in urbanization. This breakthrough came only with the enormous growth in productivity caused by the use of inanimate energy and machinery. How difficult it was to achieve the transition is agonizingly apparent from statistics showing that even with the conquest of the New World the growth of urbanization during the three postmedieval centuries in Europe was barely perceptible. I have assembled population estimates at two or more dates for 33 towns and cities in the 16th century, 46 in the 17th and 61 in the 18th. The average rate of growth during the three centuries was less than .6 percent per year. Estimates of the growth of Europe's population as a whole between 1650 and 1800 work out to slightly more than .4 percent. The advantage of the towns was evidently very slight. Taking only the cities of 100,000 or more inhabitants, one finds that in 1600 their combined population was 1.6 percent of the estimated population of Europe; in 1700, 1.9 percent, and in 1800, 2.2 percent. On the eve of the industrial revolution Europe was still an overwhelmingly agrarian region.

With industrialization, however, the transformation was striking. By 1801 nearly a tenth of the people of England and Wales were living in cities of 100,000 or larger. This proportion doubled in 40 years and doubled again in another 60 years. By 1900 Britain was an urbanized society. In general, the later each country became industrialized, the faster was its urbanization. The change from a population with 10 percent of its members in cities of 100,000 or larger to one in which 30 percent lived in such cities took about 79 years in England and Wales, 66 in the U.S., 48 in Germany, 36 in Japan and 26 in Australia. The close association between economic development and urbanization has persisted; as the bottom illustration on page 8 shows, in 199 countries around 1960 the proportion of the population living in cities varied sharply with per capita income.
Rapid urbanization of the world’s population is evident in this comparison of total population (black curve) with the population in cities of more than 100,000 inhabitants (colored curve) over more than a century and a half. The use of cities of 100,000 or larger to define an urban population shows a close correlation with other definitions of urbanism.

In the United Kingdom, one of the world’s most urban countries, the proportion was slightly higher in 1926 (78.7 percent) than in 1961 (78.3 percent).

At the end of the curve some ambiguity appears. As a society becomes advanced enough to be highly urbanized, it can also afford considerable suburbanization and fringe development. In a sense the slowing down of urbanization is thus more apparent than real: an increasing proportion of urbanites simply live in the country and are classified as rural. Many countries now try to compensate for this ambiguity by enlarging the boundaries of urban places; they did so in numbers of censuses taken around 1960. Whether in these cases the old classification of urban or the new one is erroneous depends on how one looks at it; at a very advanced stage the entire concept of urbanization becomes ambiguous.

The end of urbanization cannot be unraveled without going into the ways in which economic development governs urbanization. Here the first question is: Where do the urbanites come from? The possible answers are few: The proportion of people in cities can increase because rural settlements grow larger and are reclassified as towns or cities; because the excess of births over deaths is greater in the city than in the country; or because people move from the country to the city.

The first factor has usually had only slight influence. The second has apparently never been the case. Indeed, a chief obstacle to the growth of cities in the past has been their excessive mortality. London’s water in the middle of the 19th century came mainly from wells and rivers that drained cesspools, graveyards and tidal areas. The city was regularly ravaged by cholera. Tables for 1841 show an expectation of life of about 36 years for London and 26 for Liverpool and Manchester, as compared to 41 for England and Wales as a whole. After 1850, mainly as a result of sanitary measures and some improvement in nutrition and housing, city health improved, but as late as the period 1901–1910 the death rate of the urban counties in England and Wales, as modified to make the age structure comparable, was 33 percent higher than the death rate of the rural counties.

As Bernard Benjamin, a chief statistician of the British General Register Office, has remarked: “Living in the town involved not only a higher risk of epidemic and crowd diseases ... but also a higher risk of degenerative disease—the harder wear and tear of factory employment and urban discomfort.” By 1950, however, virtually the entire differential had been wiped out.

As for birth rates, during rapid urbanization in the past they were notably lower in cities than in rural areas. In fact, the gap tended to widen somewhat as urbanization proceeded in the latter half of the 19th century and the first quarter of the 20th. In 1800 urban women in the U.S. had 36 percent fewer children than rural women did; in 1840, 38 percent and in 1930, 41 percent. Thereafter the difference diminished.

With mortality in the cities higher and birth rates lower, and with reclassification a minor factor, the only real source for the growth in the proportion of people in urban areas during the industrial transition was rural-urban migration. This source had to be plentiful enough not only to overcome the substantial disadvantage of the cities in natural increase but also, above that, to furnish a big margin of growth in their populations. If, for example, the cities had a death rate a third higher and a birth rate a third lower than the rural rates (as was typical in the latter half of the 19th century), they would require each year perhaps 40 to 45 migrants from elsewhere per 1,000 of their population to maintain a growth rate of 3 percent per year. Such a rate of migration could easily be maintained as long as the rural portion of the population was large, but when this condition
ceased to obtain, the maintenance of the same urban rate meant an increasing drain on the countryside.

**Why did the rural-urban migration occur?** The reason was that the increase in technological enhancement of human productivity, together with certain constant factors, rewarded urban concentrations. One of the constant factors was that agriculture uses land as its prime instrument of production and hence spreads out people who are engaged in it, whereas manufacturing, commerce and services use land only as a site. Moreover, the demand for agricultural products is less elastic than the demand for services and manufactures. As productivity grows, services and manufactures can absorb more manpower by paying higher wages. Since nonagricultural activities can use land simply as a site, they can locate near one another (in towns and cities) and thus minimize the friction of space inevitably involved in the division of labor. At the same time, as agricultural technology is improved, capital costs in farming rise and manpower becomes not only less needed but also economically more burdensome. A substantial portion of the agricultural population is therefore sufficiently disadvantaged, in relative terms, to be attracted by higher wages in other sectors.

In this light one sees why a large flow of people from farms to cities was generated in every country that passed through the industrial revolution. One also sees why, with an even higher proportion of people already in cities and with the inability of city people to replace themselves by reproduction, the drain eventually became so heavy that in many nations the rural population began to decline in absolute as well as relative terms. In Sweden it declined after 1920, in England and Wales after 1861, in Belgium after 1910.

Realizing that urbanization is transitional and finite, one comes on another fact—a fact that throws light on the circumstances in which urbanization comes to an end. A basic feature of

<table>
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<th>AREA</th>
<th>POPULATION (THOUSANDS)</th>
<th>NUMBER OF CITIES OVER 100,000</th>
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</thead>
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<tr>
<td>OCEANIA</td>
<td>14,698</td>
<td>12</td>
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<td>NORTHERN AMERICA</td>
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<td>MIDDLE AMERICA</td>
<td>66,897</td>
<td>37</td>
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<td>SOUTH AMERICA</td>
<td>144,728</td>
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<tr>
<td>ASIA</td>
<td>1,593,876</td>
<td>481</td>
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<tr>
<td>NORTHEASTERN AND CENTRAL EUROPE</td>
<td>272,772</td>
<td>214</td>
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<td>EASTERN AND SOUTHERN EUROPE</td>
<td>154,756</td>
<td>94</td>
</tr>
<tr>
<td>U.S.S.R.</td>
<td>221,465</td>
<td>220</td>
</tr>
<tr>
<td>WORLD TOTAL</td>
<td>2,929,274</td>
<td>1,374</td>
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**DEGREE OF URBANIZATION** in the major regions of the world is indicated according to two different methods of classification. One uses the "urban" population as defined by each country of a region. The other uses the population in cities of 100,000 or more.
GROUPING OF NATIONS according to degree of urbanization shows that more than half are less than 30 percent urbanized and that 45 are more than 50 percent urbanized. The chart can also be read cumulatively from the bottom to show, for example, that 22 percent of the world’s population live in countries that are more than 50 percent urbanized and that those countries have 45 percent of the world’s urban people and 48 percent of its city people. The approximate date of the population statistics used is 1960.

URBANIZATION AND INCOME are compared. It is apparent that a linear correlation exists between per capita income and degree of urbanization. Thus the three countries with a per capita income of $1,500 or more a year have the highest degree of urbanization—and the 63 countries with per capita income under $100 a year have the lowest degree—by either of two classifications of urbanization; the urban population as defined by each country or the population living in cities of 100,000 or more inhabitants.
the transition is the profound switch from agricultural to nonagricultural employment. This change is associated with urbanization but not identical with it. The difference emerges particularly in the later stages. Then the availability of automobiles, radios, motion pictures and electricity, as well as the reduction of the workweek and the workday, mitigate the disadvantages of living in the country. Concurrently the expanding size of cities makes them more difficult to live in. The population classed as "rural" is accordingly enlarged, both from cities and from true farms.

For these reasons the "rural" population in some industrial countries never did fall in absolute size. In all the industrial countries, however, the population dependent on agriculture—which the reader will recognize as a more functional definition of the nonurban population than mere rural residence—decreased in absolute as well as relative terms. In the U.S., for example, the net migration from farms totaled more than 27 million between 1920 and 1959 and thus averaged approximately 700,000 a year. As a result the farm population declined from 33.5 million in 1916 to 20.5 million in 1960, in spite of the large excess of births in farm families. In 1964, by a stricter American definition classifying as "farm families" only those families actually earning their living from agriculture, the farm population was down to 12.9 million. This number represented 6.8 percent of the nation's population; the comparable figure for 1880 was 44 percent. In Great Britain the number of males occupied in agriculture was at its peak, 1.8 million, in 1851; by 1961 it had fallen to 5 million.

In the later stages of the cycle, urbanization in the industrial countries tends to cease. Hence the connection between economic development and the growth of cities also ceases. The change is explained by two circumstances. First, there is no longer enough farm population to furnish a significant migration to the cities. (What can 12.9 million American farmers contribute to the growth of the 100 million people already in urbanized areas?) Second, the rural nonfarm population, nourished by refugees from the expanding cities, begins to increase as fast as the city population. The effort of census bureaus to count fringe residents as urban simply pushes the definition of "urban" away from the notion of dense settlement and in the direction of the term "nonfarm." As the urban population becomes more "rural," which is to say less densely set-

**INDUSTRIALIZED NATIONS** underwent a process of urbanization that is typified by the curves shown here for four countries. It was closely related to economic development. The figures for 1950 and 1960 are based on a classification that counts as urban the fringe residents of urbanized areas; that classification was not used for the earlier years shown.

**NONINDUSTRIAL NATIONS** are undergoing a process of urbanization that is typified by these curves. The process started much later than in the industrialized nations, as can be seen by comparing this chart with the one at the top of the page, and is attributable more to the rapid rise of total population in these countries than to economic development.
The advanced industrial peoples are for a time able to enjoy the amenities of urban life without the excessive crowding of the past. Here, however, one again encounters the fact that a cessation of urbanization does not necessarily mean a cessation of city growth. An example is provided by New Zealand. Between 1945 and 1961 the proportion of New Zealand’s population classed as urban—that is, the ratio between urban and rural residents—changed hardly at all (from 61.3 percent to 63.6 percent) but the urban population increased by 50 percent. In Japan between 1940 and 1950 urbanization actually decreased slightly, but the urban population increased by 13 percent.

The point to be kept in mind is that once urbanization ceases, city growth becomes a function of general population growth. Enough farm-to-city migration may still occur to redress the difference in natural increase. The reproductive rate of urbanites tends, however, to increase when they live at lower densities, and the reproductive rate of “urbanized” farmers tends to decrease; hence little migration is required to make the urban increase equal the national increase.

I now turn to the currently underdeveloped countries. With the advanced nations having slackened their rate of urbanization, it is the others—representing three-fourths of humanity—that are mainly responsible for the rapid urbanization now characterizing the world as a whole. In fact, between 1950 and 1960 the proportion of the population in cities of 100,000 or more rose about a third faster in the underdeveloped regions than in the developed ones. Among the underdeveloped regions the pace was slow in eastern and southern Europe, but in the rest of the underdeveloped world the proportion in cities rose twice as fast as it did in the industrialized countries, even though the latter countries in many cases broadened their definitions of urban places to include more suburban and fringe residents.

Because of the characteristic pattern of urbanization, the current rates of urbanization in underdeveloped countries could be expected to exceed those now existing in countries far advanced in the cycle. On discovering that this is the case one is tempted to say that the underdeveloped regions are now in the typical stage of urbanization associated with early economic development. This notion, however, is erroneous. In their
Urbanization in underdeveloped countries is definitely not repeating past history. Indeed, the best grasp of their present situation comes from analyzing how their course differs from the previous pattern of development.

The first thing to note is that today's underdeveloped countries are urbanizing not only more rapidly than the industrial nations are now but also much more rapidly than the industrial nations did in the heyday of their urban growth. The difference, however, is not large. In 40 underdeveloped countries for which we have data in recent decades, the average gain in the proportion of the population urban was 20 percent per decade; in 16 industrial countries, during the decades of their most rapid urbanization (mainly in the 19th century), the average gain per decade was 15 percent.

This finding that urbanization is proceeding only a little faster in underdeveloped countries than it did historically in the advanced nations may be questioned by the reader. It seemingly belies the widespread impression that cities throughout the nonindustrial parts of the world are bursting with people. There is, however, no contradiction. One must recall the basic distinction between a change in the proportion of the population urban, which is a ratio, and the absolute growth of cities. The popular impression is correct: the cities in underdeveloped areas are growing at a disconcerting rate. They are far outstripping the city boom of the industrializing era in the 19th century.

If they continue at their recent rate of growth, they will double their population every 15 years.

In 34 underdeveloped countries for which we have data relating to the 1940s and 1950s, the average annual gain in the urban population was 4.5 percent. The figure is remarkably similar for the various regions: 4.7 percent in seven countries of Africa, 4.7 percent in 15 countries of Asia and 4.3 percent in 12 countries of Latin America. In contrast, in nine European countries during their period of fastest urban population growth (mostly in the latter half of the 19th century) the average gain per year was 2.1 percent. Even the frontier industrial countries—the U.S., Australia—New Zealand, Canada and Argentina—which received huge numbers of immigrants, had a smaller population growth in towns and cities: 4.2 percent per year. In Japan and the U.S.S.R., the rate was respectively 5.4 and 4.3 percent per year, but their economic growth began only recently.

How is it possible that the contrast in growth between today's underdeveloped countries and yesterday's industrializing countries is sharper with respect to the absolute urban population than with respect to the urban share of the total population? The answer lies in another profound difference between the two sets of countries—a difference in total population growth, rural as well as urban. Contemporary underdeveloped populations have been growing since 1940—more than twice as fast as industrialized populations, and their increase far exceeds the growth of the latter at the peak of their expansion. The only rivals in an earlier day were the frontier nations, which had the help of great streams of immigrants. Today the underdeveloped nations—already densely settled, tragically impoverished and with gloomy economic prospects—are multiplying their people by sheer biological increase at a rate that is unprecedented. It is this population boom that is overwhelmingly responsible for the rapid inflation of city populations in such countries. Contrary

DENSE URBANIZATION of northeastern U.S. is portrayed in a mosaic of aerial photographs beginning on this page and continued on the next four pages. At left center is the lower part of Manhattan Island. In this and succeeding photographs southwest is to right.
to popular opinion both inside and outside those countries, the main factor is not rural-urban migration.

This point can be demonstrated easily by a calculation that has the effect of eliminating the influence of general population growth on urban growth. The calculation involves assuming that the total population of a given country remained constant over a period of time but that the percentage urban changed as it did historically. In this manner one obtains the growth of the absolute urban population that would have occurred if rural-urban migration were the only factor affecting it. As an example, Costa Rica had in 1927 a total population of 471,500, of which 88,600, or 18.8 percent, was urban. By 1963 the country’s total population was 1,325,000 and the urban population was 456,600, or 34.5 percent. If the total population had remained at 471,500 but the percentage urban had still risen from 18.8 to 34.5, the absolute urban population in 1963 would have been only 162,700. That is the growth that would have occurred in the urban population if rural-urban migration had been the only factor. In actuality the urban population rose to 456,600. In other words, only 20 percent of the rapid growth of Costa Rica’s towns and cities was attributable to urbanization per se; 44 percent was attributable solely to the country’s general population increase, the remainder to the joint operation of both factors. Similarly, in Mexico between 1940 and 1960, 50 percent of the urban population increase was attributable to natural multiplication alone and only 22 percent to urbanization alone.

The past performance of the advanced countries presents a sharp contrast. In Switzerland between 1850 and 1888, when the proportion urban resembled that in Costa Rica recently, general population growth alone accounted for only 19 percent of the increase of town and city people, and rural-urban migration alone accounted for 69 percent. In France between 1846 and 1911 only 21 percent of the growth in the absolute urban population was due to general growth alone.

The conclusion to which this contrast points is that one anxiety of governments in the underdeveloped nations is misplaced. Impressed by the mushrooming in their cities of shantytowns filled with ragged peasants, they attribute the fantastically fast city growth to rural-urban migration. Actually this migration now does little more than make up for the small difference in the birth rate between city and countryside. In the history of the industrial nations, as we have seen, the sizable difference between urban and rural birth rates and death rates required that cities, if they were to grow, had to have an enormous influx of people from farms and villages. Today in the underdeveloped countries the towns and cities have only a slight disadvantage in fertility, and their old disadvantage in mortality not only has been wiped out but also in many cases has been reversed. During the 19th century the urbanizing nations were learning what to keep crowded populations in cities from dying like flies. Now the lesson has been learned, and it is being applied to cities even in countries just emerging from tribalism. In fact, a disproportionate share of public health funds goes into cities. As a result, throughout the nonindustrial world people in cities are multiplying as never before, and rural-urban migration is playing a much lesser role.

The trends just described have an important implication for the rural population. Given the explosive overall
population growth in underdeveloped countries, it follows that if the rural population is not to pile up on the land and reach an economically absurd density, a high rate of rural-urban migration must be maintained. Indeed, the exodus from rural areas should be higher than in the past. But this high rate of internal movement is not taking place, and there is some doubt that it could conceivably do so.

To elaborate I shall return to my earlier point that in the evolution of industrialized countries the rural citizenry often declined in absolute as well as relative terms. The rural population of France—26.8 million in 1846—was down to 20.8 million by 1926 and 17.2 million by 1962, notwithstanding a gain in the nation's total population during this period. Sweden's rural population dropped from 4.3 million in 1910 to 3.5 million in 1960. Since the category "rural" includes an increasing portion of urbanites living in fringe areas, the historical drop was more drastic and consistent specifically in the farm population. In the U.S., although the "rural" population never quite ceased to grow, the farm contingent began its long descent shortly after the turn of the century; today it is less than two-fifths of what it was in 1910.

This transformation is not occurring in contemporary underdeveloped countries. In spite of the enormous growth of their cities, their rural populations—and their more narrowly defined agricultural populations—are growing at a rate that in many cases exceeds the rise of even the urban population during the evolution of the new advanced countries. The poor countries thus confront a grave dilemma. If they do not substantially step up the exodus from rural areas, these areas will be swamped with underemployed farmers. If they do step up the exodus, the cities will grow at a disastrous rate.

The rapid growth of cities in the advanced countries, painful though it was, had the effect of solving a problem—the problem of the rural population. The growth of cities enabled agricultural holdings to be consolidated, allowed increased capitalization and in general resulted in greater efficiency. Now, however, the underdeveloped countries are experiencing an even more rapid urban growth and are suffering from urban problems that urbanization is not solving their ruralills.

A case in point is Venezuela. Its capital, Caracas, jumped from a population of 359,000 in 1941 to 1,507,000 in 1963; other Venezuelan towns, and cities equaled or exceeded this growth. Is this rapid rise decimating the countryside of people? No, the Venezuelan farm population increased in the decade 1951–1961 by 11 percent. The only thing that declined was the amount of cultivated land. As a result the agricultural population density became worse. In 1950 there were some 64 males engaged in agriculture per square mile of cultivated land; in 1961 there were 78. (Compare this with 4.8 males occupied in agriculture per square mile of cultivated land in Canada, 6.8 in the U.S. and 15.6 in Argentina.) With each male occupied in agriculture there are of course dependents. Approximately 225 persons in Venezuela are trying to live from each square mile of cultivated land. Most of the growth of cities in Venezuela is attributable to overall population growth. If the general population had not grown at all, and internal migration had been large enough to produce the actual shift in the proportion in cities, the increase in urban population would have been only 28 percent of what it was and the rural population would have been reduced by 57 percent.

The story of Venezuela is being re-
peated virtually everywhere in the underdeveloped world. It is not only Caracas that has thousands of squatters living in self-constructed junk houses on land that does not belong to them. By whatever name they are called, the squatters are to be found in all major cities in the poorer countries. They live in broad gullies beneath the main plain in San Salvador and on the hillsides of Rio de Janeiro and Bogotá. They tend to occupy with implacable determination parks, school grounds and vacant lots. Amman, the capital of Jordan, grew from 12,000 in 1958 to 247,000 in 1961. A good part of it is slums, and urban amenities are lacking most of the time for most of the people. Greater Baghdad now has an estimated 850,000 people; its slums, like those in many other underdeveloped countries, are in two zones—the central part of the city and the outlying areas. Here are the sarifa areas, characterized by self-built reed huts; these areas account for about 45 percent of the housing in the entire city and are devoid of amenities, including even latrines. In addition to such urban problems, all the countries struggling for higher living levels find their rural population growing too and piling up on already crowded land.

I have characterized urbanization as a transformation that, unlike economic development, is finally accomplished and comes to an end. At the 1950-1960 rate, the term "urbanized world" will be applicable well before the end of the century. One should scarcely expect, however, that mankind will complete its urbanization without major complications. One sign of trouble ahead turns on the distinction I made at the start between urbanization and city growth per se. Around the globe today city growth is disproportionate to urbanization. The discrepancy is paradoxical in the industrial nations and worse than paradoxical in the non-industrial.

It is in this respect that the non-industrial nations, which still make up the great majority of nations, are far from repeating past history. In the 19th and early 20th centuries the growth of cities arose from and contributed to economic advancement. Cities took surplus manpower from the countryside and put it to work producing goods and services that in turn helped to modernize agriculture. But today in underdeveloped countries, as in present-day advanced nations, city growth has become increasingly unhinged from economic development and hence from rural-urban migration. It derives in greater degree from overall population growth, and this growth in nonindustrial lands has become unprecedented because of modern health techniques combined with high birth rates.

The speed of world population growth is twice what it was before 1940, and the swiftest increase has shifted from the advanced to the backward nations. In the latter countries, consequently, it is virtually impossible to create city services fast enough to take care of the huge, never ending cohorts of babies and peasants swelling the urban masses. It is even harder to expand agricultural land and capital fast enough to accommodate the enormous natural increase on farms. The problem is not urbanization, not rural urban migration, but human multiplication. It is a problem that is new in both its scale and its setting, and runaway city growth is only one of its painful expressions.

As long as the human population expands, cities will expand too, regardless of whether urbanization increases or declines. This means that some individual cities will reach a size that will make 19th-century metropolises look...
like small towns. If the New York urbanized area should continue to grow only as fast as the nation's population (according to medium projections of the latter by the Bureau of the Census), it would reach 21 million by 1985 and 30 million by 2010. I have calculated that if India's population should grow as the UN projections indicate it will, the largest city in India in the year 2000 will have between 36 and 66 million inhabitants.

What is the implication of such giant agglomerations for human density? In 1950 the New York-Northeastern New Jersey urbanized area had an average density of 9,810 persons per square mile. With 30 million people in the year 2010, the density would be 24,000 per square mile. Although this level is exceeded now in parts of New York City (which averages about 25,000 per square mile) and many other cities, it is a high density to be spread over such a big area; it would cover, remember, the suburban areas to which people moved to escape high density. Actually, however, the density of the New York urbanized region is dropping, not increasing, as the population grows. The reason is that the territory covered by the urban agglomeration is growing faster than the population; it grew by 51 percent from 1950 to 1960, whereas the population rose by 15 percent.

If, then, one projects the rise in population and the rise in territory for the New York urbanized region, one finds the density problem solved. It is not solved for long, though, because New York is not the only city in the region that is expanding. So are Philadelphia, Trenton, Hartford, New Haven and so on. By 1960 a huge stretch of territory about 600 miles long and 30 to 100 miles wide along the Eastern seaboard contained some 37 million people. Since the whole area is becoming one big poly-nucleated city, its population cannot long expand without a rise in density. This persistent human multiplication promises to frustrate the ceaseless search for space—for ample residential lots, wide-open suburban school grounds, sprawling shopping centers, one-floor factories, broad freeways.

How people feel about giant agglomerations is best indicated by their head-long effort to escape them. The bigger the city, the higher the cost of space; yet, the more the level of living rises, the more people are willing to pay for low-density living. Nevertheless, as urbanized areas expand and collide, it seems probable that life in low-density surroundings will become too dear for the great majority.

One can of course imagine that cities may cease to grow and may even shrink in size while the population in general continues to multiply. Even this dream, however, would not permanently solve the problem of space. It would eventually obliterate the distinction between urban and rural, but at the expense of the rural.

It seems plain that the only way to stop urban crowding and to solve most of the urban problems besetting both the developed and the underdeveloped nations is to reduce the overall rate of population growth. Policies designed to do this have as yet little intelligence and power behind them. Urban planners continue to treat population growth as something to be planned for or something to be itself planned. Any talk about applying brakes to city growth is therefore purely speculative, overshadowed as it is by the reality of uncontrolled population increase.

![Image of the Potomac River and Tidal Basin](image_url)
The Author

KINGSLEY DAVIS is professor of sociology and director of International Population and Urban Research at the University of California at Berkeley. He was born and reared in West Texas, then a highly rural region, where he acquired a strong preference for open spaces rather than cities. He was graduated from the University of Texas and received a master's degree in philosophy there; in 1936 he obtained a Ph.D. in sociology at Harvard University. Later he held a postdoctoral fellowship from the Social Science Research Council for advanced study in demography; more recently he was a fellow at the Center for Advanced Study in the Behavioral Sciences and a senior postdoctoral fellow of the National Science Foundation. His interest in population has taken him to Europe, Latin America, India, Pakistan, and 10 countries in Africa; he has also served as U.S. representative to the Population Commission of the United Nations. Davis has been designated as chairman of the National Research Council's newly created Behavioral Sciences Division. Before going to the Oakland-San Francisco metropolitan area in 1955 he taught for seven years at Columbia University, a juxtaposition that moved him to write: "For a man who dislikes large cities, I have spent much of my adult life in major metropolitan areas."

Bibliography

