Characteristics and Processes of Urbanization in the Caribbean

Thomas D. Boswell
Department of Geography
University of Miami
Coral Gables, FL 33124

ABSTRACT
This paper demonstrates that Caribbean cities differ from North American cities in six major respects: 1) the population growth rates of the Caribbean urban areas are two to three times higher; 2) their urban systems are characterized by higher levels of primacy than those in North America; 3) unlike many North American cities the Caribbean cities have not experienced a manufacturing revolution; 4) unemployment levels are higher in Caribbean cities; 5) a larger proportion of the labor force in Caribbean cities works in the informal or petty capitalist sector of their economies; and 6) shanty towns and squatter settlements are much more common in Caribbean cities. Although Caribbean cities are still growing faster than their North American counterparts, there are indications that their growth rates are beginning to abate, at least on those islands where the processes of modernization have been carried the farthest.

INTRODUCTION

Although the Caribbean has experienced a long history of urban dominance by its capital port cities, many of which were founded during the sixteenth and seventeenth centuries, it has only been since the Second World War that this region has experienced rapid rates of urban growth. Today, its urban populations are growing at rates approximately two to three times those of most cities in the more developed countries of the world (Hope 1986). As a consequence of this relatively new and explosive growth, the social science literature dealing with urbanization in this part of the world also has greatly increased, especially since the 1970s.

The purpose of this paper is twofold. First, a bibliography has been assembled of over 200 sources dealing with the processes of urbanization in the Caribbean. It is comprised almost totally of articles and books. Due to page constraints, no attempt has been made to include all the various government reports and census materials published for each of the individual island territories, nor has there been an exhaustive search of the M.A. theses and Ph.D. dissertations written on this subject. Furthermore, the use of the term "Caribbean" is being restricted here to include the Islands located in the Caribbean Sea and the Bahamas, which are actually located in the Atlantic Ocean but share strong historical and cultural links with the Caribbean islands [(1)] (Figure 1). The second purpose of this paper is to provide a general summary of the findings of this body of literature. Admittedly, this will not be an exhaustive review of this extensive literature, again because of page limitations, but rather will focus on the areas that have received the most coverage by geographers.

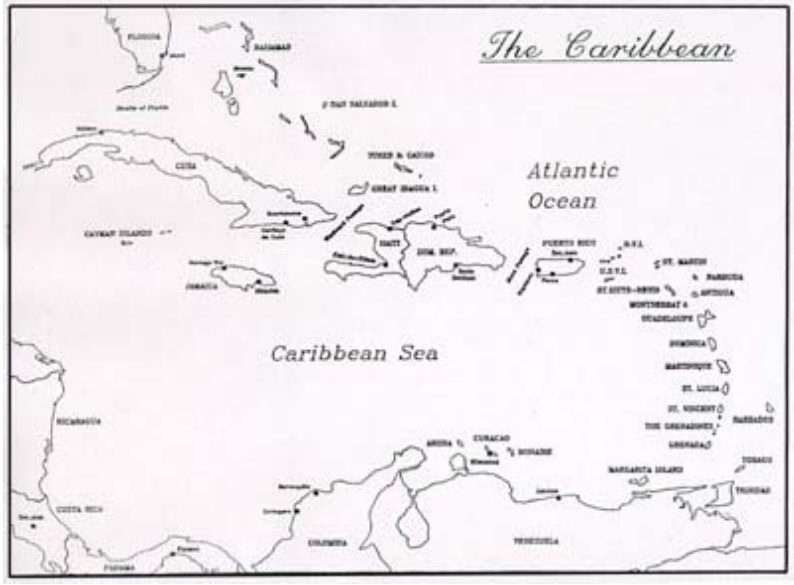
GENERAL CHARACTERISTICS OF CARIBBEAN URBANIZATION

Compared to other major regions in the world (Table 1), the level of urbanization[(2)] in the Caribbean occupies an intermediate position. Currently, slightly over half of all people of the West Indies[(3)] live in urban environments. This is above average for the world and is higher than all of the other regions of the less developed world, except for mainland Latin America. The

somewhat higher levels of urban residence in Central and South America, both included among the less developed countries (LDCs), reflect the attitude of their Spanish colonizers who had only minimal interests in agriculture and other primary activities, except for mining. The more developed countries (MDCs) have a collective level of urbanization of 73 percent (Population Reference Bureau 1990) that is significantly higher than that of the Caribbean. The higher percentage of urban residence in the MDCs is usually attributed to their higher levels of industrialization and modernization.

Figures in Table 1 also indicate two other significant facts regarding the processes of urbanization in the West Indies. First, there has been a steady increase in the percentage of people living in cities and towns in the region that is likely to continue into the future, at least for another ten years. During the 1970s and 1980s the urban population of the Caribbean has grown at an annual rate slightly in excess of three percent, while the rural increase **[end p. 67]**

Figure 1



[end p. 68]

Table 1: Percentage Urban in World Regions and Areas, 1960-2000

Regions or Areas	Years (Percentages)				
	1960	1970	1980	1990	2000
World Total	33.9	37.5	41.3	41.0*	51.3
Less Developed Regions	21.9	25.8	30.5	32.0*	43.5
Africa	18.2	22.9	28.9	31.0*	42.5
Latin America	49.5	57.4	64.7	69.0*	75.2
Caribbean	38.2	45.1	52.2	55.0*	64.6
East Asia	24.7	28.6	33.1	38.6	45.4
South Asia	17.8	20.5	24.0	26.0*	36.1

Oceania	66.2	70.8	75.9	80.4	83.0

Source: Kempe Ronald Hope, *Urbanization in the Commonwealth Caribbean*. Boulder: Westview Press, 1986, 2.

*Population Reference Bureau, *1990 World Population Data Sheet*. Washington, D.C., 1990.

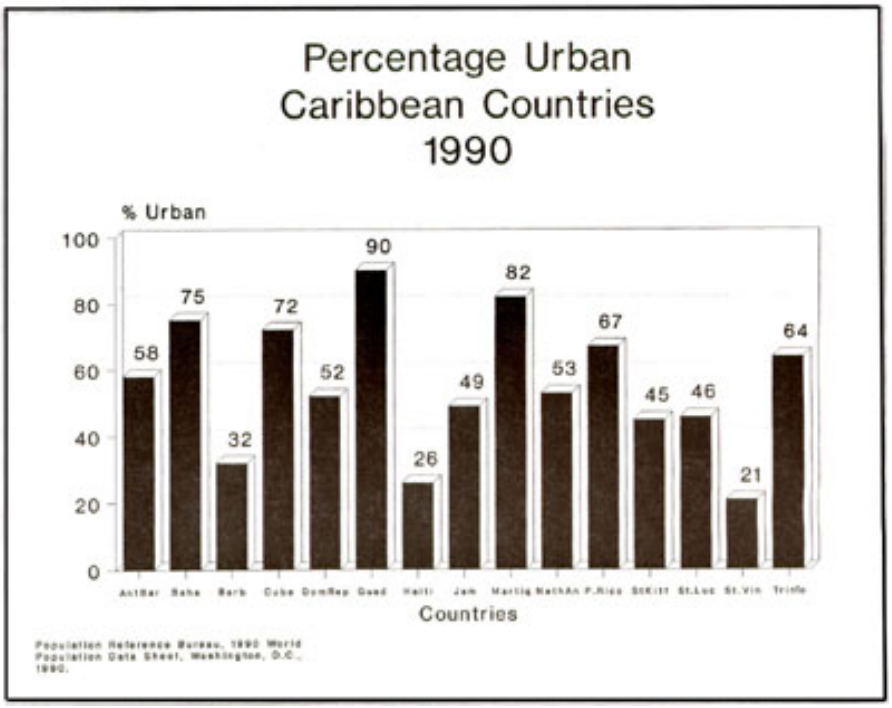
has been less than one percent per annum (Hope 1986). If this current urban growth rate continues, the population of Caribbean cities would double every 23 years. Second, the same processes of growth that are occurring in the West Indies appear to operating in the other LDCs, as their percentages of urban residence have likewise been increasing during the period shown in this table.

When the levels of urbanization are considered for individual island territories in the Caribbean (Figure 2), it is clear that there are wide variations; with a high of 90 percent in Guadeloupe to a low of 21 percent in St. Vincent. There is no discernable relationship between percentage of urban residence and current or former colonial affiliations. For instance, the French territories of Guadeloupe and Martinique exhibit the two highest percentages, but the former French colony of Haiti has the second lowest.

In a preliminary attempt to see if there are other variables that are related to the individual country levels of urbanization in the West Indies six socioeconomic variables have been selected for analysis (Table 2). Each has been correlated with the percentages of urban residence for the countries for which comparable data are available (Table 3). Only two of the six variables are significantly[(4)] related to percent urban, as indicated by the shaded cells in Table 3. The highest is for the positive association with per capita gross national product (GNP). Thus, about 34 percent (r^2) of the variation in percentage urban is associated with per capita income levels. The correlation coefficient for this relationship is almost identical to that ($r = .53$) determined in another study (Potter 1989f) of Caribbean urbanization using gross domestic product as a measure if per capita income. Other studies of countries throughout the world have found a similar positive relationship between level of urbanization and per capita income (Drakakis-Smith 1987), suggesting a significant association between urbanization and modernization.

The second variable that is significantly correlated with percentage urban is the one representing island total fertility rates (Table 3). Although this is not a strong relationship ($r^2 = .21$) it is a reasonable one.[(5)] Virtually all demographic studies comparing rural and urban fertility rates have found the latter to be lower. Although a number of more specific factors affect this negative relationship between urban residence and fertility, the bottom line is that it is because children are more of an economic liability in urban areas than they are in most rural regions of the LDCs. To summarize, the correlations displayed in Table 3 suggest that urbanization in the Caribbean is moderately, positively associated with per capita GNP and slightly, negatively related to fertility levels. Another indication of the recency and speed with which urbanization is proceeding in the Caribbean is the fact that in 1950 there were only seven cities with populations exceeding 100,000. By 1970 the number had increased to twelve (Potter 1989f). Now, in 1990, there are twenty-five such cities, with four having over one million **[end p. 69]**

Figure 2



[end p. 70]

Table 2: Socioeconomic Variables for Countries in the Caribbean, 1990

Caribbean Countries	Variables					
	1990 Pop. (1,000)	Nat. Inc.	Total Fert.	Life Exp. (Yrs.)	PCGNP ($1,000)	Density (Sq. Mile)
Antigua and Barbuda	100	1.0	1.7	71	2,800	377
Bahamas	200	1.5	2.3	71	10,570	46
Barbados	300	.7	1.8	75	5,990	1,548
Cuba	10,600	1.2	1.9	75	NA	240
Dominica	100	2.1	2.7	75	1,650	294
Dominican Republic	7,200	2.5	3.8	66	680	381
Grenada	100	3.0	4.9	71	1,370	641
Guadeloupe	300	1.4	2.2	73	NA	498
Haiti	6,500	2.2	5.1	53	360	607
Jamaica	2,400	1.7	2.4	76	1,080	575
Martinique	300	1.3	2.1	74	NA	801
Netherlands Antilles	200	1.3	2.0	73	NA	610
Puerto Rico	3,300	1.2	2.2	72	5,540	958
St. Kitts-Nevis	40	1.3	2.6	68	2,770	288
St. Lucia	200	2.2	3.8	71	1,540	639
St. Vincent and the Grenadines	100	1.9	2.8	72	1,100	753
Trinidad and Tobago	1,300	2.0	3.1	70	3,350	679

Source: Population Reference Bureau, *1990 World Population Data Sheet*, Washington, D.C., 1990.

NA = Data not available

residents (Table 4). The four "millionaire" cities are all found in countries located on the four Greater Antilles. The only Greater Antilles country not represented by a city with a million inhabitants is Jamaica, and the population of its primate city, Kingston, is close to this figure. In fact, if nearby Spanish Town is included in the metropolitan area of Kingston its population would be approximately one million.[(6)]

An additional point worth noting is that the cities shown in Table 4 are spread among eleven island territories. Only Cuba, Puerto Rico, and the Dominican Republic have more than one. Except for Guadeloupe, the largest city in each country or territory is the capital. The capital of Guadeloupe, Basse-Terre, is much older than the territory's largest city, Pointe-a-Pitre and the former never relinquished its capital status to the latter (Gastmann and MacDonald 1989).**[end p. 71]**

Table 3: Correlations Between Selected Socioeconomic Variables, and Percentage Urban for Caribbean Countries, 1990

Variables Being Correlated	Correlation Coefficients (Sig. Levels)
% Urban with Total Populations in 1990	.002 (.995)
% Urban with Rates of Natural Increase	-.272 (.326)
% Urban with Total Fertility Rates	-.461 (.084)
% Urban with Life Expectancies at Birth	.404 (.135)
% Urban with Per Capita Gross National Product	.587 (.058)
% Urban with Population Density (People Per Square Mile)	-.350 (.201)

A MERCANTILE HISTORY OF URBANIZATION AND DEPENDENCY

The history of development of the urban systems in the West Indies more closely fits the Vance Mercantile Model (Vance 1970) of urban settlement than it does Christaller's classical Central Place Theory (Haggett 1983). The reason for this statement is that the Christaller model assumes a closed system in which development evolves from the bottom of the urban hierarchy to the top of it. On the other hand, Vance's model allows for the operation of exogenous forces and suggests that development in the settlement hierarchies of European-colonized areas extended from the top down.

In keeping with notions in Vance's Model, the European colonization of the islands in the Caribbean was established for purposes of trade under the mercantile system that prevailed from the 15th through 19th centuries. Port cities were established, usually on the more protected leeward sides of the islands in locations that had harbors sheltered by embayments, offshore islands, or peninsulas. These towns grew into the primate cities of their respective islands and served as the gateways for trade between their agricultural hinterlands and Europe. Growth and

innovations spread from the port cities inland until an urban hierarchy developed, especially on the larger islands. Thus, Europeans and their trade represented the outside force driving the mercantile system, as the smaller settlements diffused from the primate port cities inland, in a fashion downward through the urban hierarchy (Potter 1985, 1989).

The prevailing mercantile laws dictated unfavorable terms of trade for the West Indies partly because they severely limited the development of manufacturing activities. Thus, the Caribbean islands traded less expensive agricultural products such as sugar, indigo, cotton, coconuts, and cacao in return for more costly imports of manufactured items and slaves. One consequence of this system of exploitation is that the cities in the Caribbean have never experienced as much manufacturing activity as their European counterparts (Clarke 1974, 1989; Potter 1989f). Although many island governments are trying to change this situation, this early "urbanization without industrialization" retarded the growth of jobs in Caribbean towns that served as a major deterrent to their development. Historically, West Indian primate cities have served as capitals, centers for commerce, and retail outlets, but not locations for manufacturing activities. While Europe passed through the industrial revolution the Caribbean remained dependent upon agriculture, a situation that persisted until the 1940s (Clarke 1974).**[end p. 72]**

Table 4: Cities in the Caribbean With Populations Over 100,000 and Their Estimated Populations, 1990

Country or Territory	Metropolitan Area	Estimated Population* (Thousands)
Bahamas	Nassau	170
Barbados	Bridgetown	120
Cuba	Habana	2,080
	Santiago de Cuba	384
	Camaguay	276
	Holguin	209
	Santa Clara	192
	Guantanamo	187
	Cienfuegos	116
	Bayamo	120
	Matanzas	111
Dominican Republic	Santo Domingo	1,882
	Santiago de Los Caballeros	400
Guadeloupe	Point-a-Pitre	134
Haiti	Port-au-Prince	1,273
Jamaica	Kingston	906
Martinique	Fort-de-France	123
Netherlands Antilles	Willemstad, Curacao	187
Puerto Rico	San Juan	1,381
	Ponce	322

	Bayamon	266
	Caguas	221
	Carolina	188
	Mayaguez	169
Trinidad & Tobago	Port of Spain	318

*These estimates were extrapolated by the author using a continuously compounding geometric growth rate formula and base figures from: Robert B. Potter, ed. *Urbanization, Planning & Development in the Caribbean* (New York: Mansell, 1989), 6. They should be regarded as being only rough approximations.

[end p. 73]

As political independence has been achieved during the 20th century, the former Caribbean colonies have remained dependent upon their former colonizers for imports, exports, capital, and technology. During the 1960sand 1970s it became apparent that a "new international division of labor" was taking place (Drakakis-Smith 1987). As labor became increasingly expensive in European and North American countries, foreign investors and multinational corporations discovered the lower cost labor force of the Caribbean, as well as those of other Third World regions. As a result, manufacturing activities are finally being promoted in many West Indian cities. But the proportional share of industrial employment in the Caribbean is still far below that of the MDCs.

DEMOGRAPHIC FACTORS AFFECTING URBAN GROWTH

In a strict demographic sense there are only two factors that affect urban growth, natural increase and net migration. It has been found that there is a general inverse relationship between the role migration plays in affecting urban growth and the level of urbanization in most countries (Drakakis-Smith 1987). This is explained by the fact that as the percent urban increases there are proportionately fewer rural residents to move to the cities. At least this relationship holds up to a point. But beyond this point, as economic growth presumably continues, the effects of a decline in fertility begin to be felt and migration again begins to become an important factor. Zelinsky (1971) also suggests that the importance of rural-to-urban migration increases until the middle stages of development. Then it declines during the later stages to be replaced by inter- and intra-urban moves as the major types of population movements.

It is generally recognized that migration contributes between from one-third to one-half of the annual growth of cities in the Third World (Hope 1986). In 1974 Colin Clarke, when writing about the Caribbean, stated that: "Rare is the city which does not expand by natural increase and migration in almost equal proportions." In 1986 Kemp Hope estimated that only about 30 percent of the urban growth in the West Indies was due to net migration. If both scholars are correct, it would appear that the relative importance of migration is declining in the Caribbean, in line with the notion expressed in the preceding paragraph that as urbanization increases the importance of migration declines, at least for a while. Whatever the case may be, it is important to note that these are only average figures because there is considerable variation among the various island entities in the Caribbean. For instance, rural-to-urban migration accounted for about 42 percent of the urban growth in Trinidad during the 1970s (Conway 1989) and about half the increase in Puerto Rican cities during the 1980s (de Albuquerque and McElroy 1989).

But in the Bahamas a very unusual event occurred during the 1960s and 1970s. There was negative net internal migration that reduced the growth of its capital and primate city, Nassau. The reason for this was the development of the industrial and resort complex of Freeport-Lucaya on Grand Bahama island, which siphoned off most of the internal migrants who otherwise presumably would have gone to Nassau (Boswell and Biggs 1989).

The reasons for rural-to-urban migration in the Caribbean have been widely studied and are therefore well-known. The decline in island-agriculture, the disparity between rural and urban wages, the perceived availability of urban jobs, educational opportunities in cities both for the migration decision-makers and their children, greater availability of medical care in cities, and the "bright lights" syndrome of the city have all been listed as reasons, as well a many others (Hope 1986; Boswell 1978, 1986, 1989b; Boswell and Biggs 1989; Potter 1985; Potter 1989). In addition to internal migration, international migration is also a factor affecting urban increases in the West Indies. Segal estimated that by the middle 1970s at least ten percent of the Caribbean's population was living outside this region, primarily in North America and Europe (Segal 1975). In Jamaica the annual rate of growth was reduced from 1.7 to .9 percent because of emigration during the mid-1980s (Clarke 1989). During the 1960s and 1970s emigration reduced population growth to approximately one-third of the natural increase in St. Vincent and in Dominica there was a similarly-caused decrease of almost one-half (Hudson 1989). Today, about 40 percent of all persons of Puerto Rican descent live on the United States mainland. If they were to return they would increase Puerto Rico's population by almost 70 percent. The point being made is amplified with respect to its effect on urbanization when it is realized the vast majority of Caribbean migrants living overseas would probably return to live in their home country's cities, if they were to return at all.

Cuba and its urbanization patterns provides an exceptional case with respect to internal migration in the Caribbean. The Castro government has gone to extraordinary efforts to reduce the growth of Havana and to promote development of rural areas through its policy of "urbanizing" the countryside and "ruralizing" the urban population. Almost from the beginning of colonial settlement of the island by the Spanish, Havana has dominated Cuba in nearly every respect. It is because of this inequitable situation that the government embarked upon its **[end p. 74]** equalization policy of putting greater efforts in supporting growth and development of rural areas and small towns. Schools, new houses, cinemas, medical clinics, retail stores, and even whole new towns have been constructed in rural areas in an attempt to attract more people to them, partly for the purpose of assisting in the island's agricultural development. Meanwhile, there has been a policy of "positive discrimination" carried out against Havana. Little new housing has been constructed and old buildings have been allowed to fall into disrepair. As a result, annual population growth of Havana has fallen to about one-tenth of a percent as there has been very little migration into the city and fertility has fallen (Hall 1989).

An interesting question pursued in the literature dealing with rural-to-urban migration in Third World countries is what paths the migrants follow in their moves to cities. Apparently, migrants in the Caribbean follow almost all possible paths. Many move in a "step-wise" path up the urban hierarchy from smaller to larger settlements (Conway 1980, 1989). Fewer move via a "stage process", with individuals and families leaving intermediate-sized cities for larger cities and their

places being taken by migrants from smaller settlements. Many poor migrants to the largest cities originally move into a slum in the city's center and later move again to a peripheral squatter settlement or shanty town (Eyre 1972, 1979). Others move directly to the primate city, now that the transportation system has become better developed, making such moves and return visits to home easier. One study in Trinidad found that almost 70 percent of a sample of migrants to a community located in eastern metropolitan Port of Spain moved there directly from their origins. Only about one-fourth moved in a hierarchical step-wise pattern (Conway 1983). One thing is clear, however, whatever path the migrants take in moving to cities in the Caribbean, the vast majority have either friends or relatives who already live there and who can help them in adjusting to their new homes (Hope 1986). This type of "chain migration" is typical in most Third World cities (Dickenson 1983).

URBAN PRIMACY IN THE CARIBBEAN

As is characteristic of many Third World countries, the urban systems of the Caribbean islands are characterized by high levels of primacy, where one city dominates all aspects of each individual territory. The typical West Indian primate city tends to attract to itself a disproportionately large share of the island's wealth, political power, professional talent, skilled labor, and health, education, and other social services. Whether it be doctors, plumbers, teachers, or politicians, the primate city often has more than its share, whereas the rest of the territory has an inadequate supply (Boswell 1989b).

Unlike many of the MDCs which have city systems that are generally graded according to the rank-size rule, the West Indies are numerically dominated by primate cities that almost always contain more than one-fifth of the island's total population and well over half its urban residents. The average for the Caribbean is to have about one-third of the total population living in a territory's largest city (Potter 1989f) and about two-thirds of its urban residents living in the same city. Furthermore, urban primacy is not a new characteristic in the West Indies. For example, a census of the British West Indies taken in 1844 indicated that at that time 15 percent of both Grenada's and Monteserrat's populations and 25 percent of Antigua's residents lived in their respective largest towns (Hudson 1989). The figures in Table 5 display two measures of urban primacy for those Caribbean islands for which comparable data are available for 1990.[(7)] These figures show the range of both **total** and **urban** population concentrations in the respective island primate cities.

To determine some of the factors related to urban primacy in the West Indies, the two measures of primacy listed in Table 5 have been correlated with the socioeconomic variables listed in Table 2. The resultant coefficients are displayed in Table 6.[(8)] Both primacy measures exhibit moderate, significant, negative correlations with total population size. They indicate that there is a tendency for the West Indian territories with larger populations to have lower levels of primacy. This is a reasonable finding because island territories with larger populations usually have a larger number of cities that people can choose to reside in, as figures in Table 4 suggest. Thus, countries like Cuba, the Dominican Republic, and Puerto Rico have lower percentage concentrations in their primate cities than such countries as the Bahamas, St. Kitts-Nevis, and St. Vincent and the Grenadines. But this is not a perfect correlation because there are some

exceptions to this pattern, as is illustrated by the cases of Antigua, Martinique, and Trinidad.

It is interesting to note that the two measures of primacy for the West Indies are not significantly correlated with each other (bottom of Table 6). As a consequence, they only exhibit about eight percent common variation ($r^2 = .079$). The numbers in Table 5 imply that if a country has a high percentage of its **total** population living in its primate city, it is also likely to have a high percentage of its **urban** population living **[end p. 75]**

in that city, as the case of the Bahamas shows. On the other hand, it is not necessarily true that the converse relationship is correct because some territories that have a high percentage of their **urban** populations concentrated in their primate city do not have a disproportionately high percentage of their **total** populations living in the same city, as the cases of Barbados, St. Kitts-Nevis, and St. Vincent and the Grenadines illustrate.

In addition to being negatively correlated with total population size, the percent of **total** population living in primate cities is also positively correlated with per capita GNP. Potter (1985a) found a similar correlation between urban primacy and per capita gross domestic product (GDP) in the Caribbean using data from the mid-1970s. Therefore, territories with both smaller populations and higher per person GNPs exhibit a tendency to have larger proportions of their **total** populations concentrated in their primate cities. Conversely, those with larger populations and poorer economies have lower percentages of their populations residing in their largest cities, as the cases of Haiti and the Dominican Republic indicate. In the cases of the smaller and more prosperous Caribbean islands, a process of "cumulative causation" (Myrdal 1957) appears to be operative that promotes high primacy levels. That is, most investment in economic growth takes place in cities, where the infrastructure for expansion is best developed. But because there are few urban areas to choose from, these investments are made most often in the primate cities. Of course, these investments make the capital city even more attractive for future growth. Thus, the characteristics of both small population and economic development favor growth and concentration in primate cities in a "circular" fashion.

In the Caribbean, the percent of **urban** population concentration in primate cities in negatively correlated with levels of urbanization, as it was with total population size (Table 6). Therefore, West Indian territories with both small total populations and low percentages of urban residents tend to have higher percentages of their urban populations living in their largest cities, as St. Kitts-Nevis and St. Vincent illustrate.

One both interesting and paradoxical finding displayed in Table 6 is found in its bottom row. Whereas the degree of **urban** population concentration in primate cities is negatively associated with level of urbanization, the latter is positively correlated with the percentage of **total** population living in the largest cities. Thus, in the Caribbean, as percentage urban increases, **total** population concentration increases, but **urban** concentration declines. The explanation of this surprising finding awaits further research.

The characteristic of high levels of urban primacy in the West Indies may fit classical development theory models. For example, Friedmann's original statement of his well-known

core-periphery model suggested a four-stage sequence of development events (Friedmann 1966). During the second stage, increasing polarization of the development would take place, whereby urban primacy would increase. But he hypothesized that, over time, benefits of development from the core would filter down and spread to the periphery, thus causing a convergence of economic well-being during the third and fourth stages. Other development theorists have debated whether or not these "spread effects" will occur naturally. Neo-Marxists believe that primate cities serve as centers for exploitation, unless checked by government intervention. They serve as foci for external neo-colonialism by multinational and foreign investors. They also believe that the largest cities exploit their own hinterlands in a parasitic manner, whereby mercantile capitalists extract surplus value from the labor of agricultural workers and disadvantaged urban members of the informal economic sector. But the truth is most social scientists, not only neo-Marxists, believe that government intervention is necessary to bring about a convergence in the living standards between the core and periphery (Potter 1985; Paquette 1965). As a result, Potter states that "... attempts to decentralize people, jobs, and social infrastructure away from primate cities ... can be described as the single most frequent planning objective in both developed and developing countries alike" (Potter 1985).

All Caribbean countries, with the exception of Haiti, appear to be in either Friedmann's second or third stages of development. But whatever stage they are in, their governments do profess to be trying to equalize some of the differences in standards of living between their primate cities and countrysides. There is some evidence that differences in standards of living in rural and urban areas are declining in some of the more advanced Caribbean territories, as in the Bahamas (Boswell and Biggs 1989), Puerto Rico (de Albuquerque and McElroy), the U.S. Virgin Islands (de Albuquerque and McElroy), and Barbados (Potter 1989e). There also is no doubt that these differences have declined very significantly in Cuba (Hall 1989).**[end p. 76]**

Table 5: Measures of Urban Primacy in the Caribbean, 1990

Country or Territory	Measures of Urban Primacy	
	Percent of Total Population Living in Primate City	Percent of Urban Population Living in Primate City
Antigua and Barbuda	30	52
Bahamas	70	85
Barbados	32	95
Cuba	20	28
Dominican Republic	26	50
Guadeloupe	45	50
Haiti	20	75
Jamaica	38	77
Martinique	41	50
Puerto Rico	42	62
St. Kitts-Nevis	45	100
St. Lucia	31	66
St. Vincent and the Grenadines	21	100
Trinidad and Tobago	24	38

Note: These figures have been derived by extrapolating the primate city populations in the same manner as in Table 3 and then using the population figures in Table 2. They should be regarded as being rough approximations.

THE INTERNAL MORPHOLOGY OF CARIBBEAN CITIES

It is difficult to make valid generalizations about the internal structures of Caribbean cities because each has its own distinct style and individual characteristics. The best that can be accomplished is to describe two general types of urban forms, one that more often applies to small towns (with populations under 10,000) established during the colonial period and another that is more representative of the larger West Indian cities (with populations over 100,000). Settlements with populations between 10,000 and 100,000 fall into a transitional area between these two models, so they are difficult to describe with a single idealized form. This is especially true of new planned towns that have been created since the 1960s, like Ocho Rios and Portmore in Jamaica and Freeport-Lucaya in the Bahamas.

Most of the old former colonial towns that have populations of under 10,000 display many characteristics that are reminiscent of the classical model of the preindustrial city (Sjoberg 1960). Whether founded by the Spanish, French, British, or Dutch there was usually a square or central plaza that served as the city's focus of activity. If topography permitted it, a rectangular grid pattern of streets surrounded the central square and most buildings of importance were located nearby. Because these towns were built before use of automobiles they often have narrow cobblestone or brick streets that are ill-suited to today's vehicular traffic. The wealthier people and middle classes preferred to live near the town center, where they had greater accessibility to business and social contacts (Clarke 1974; Potter 1989f; Dickenson 1983). Many older small towns in Puerto Rico, the Dominican Republic, Cuba, Haiti, Jamaica, and the British, French, and Dutch islands of the eastern Caribbean exemplify this morphology.

The second morphology model applies to many larger Caribbean cities, especially those with populations in excess of 100,000 inhabitants. Virtually all of these started out as colonial towns with forms identical to those just **[end p. 77]**

Table 6: Correlations Between Selected Socioeconomic Variables and Two Measures of Urban Primacy for Caribbean Countries, 1990

Variables Being Correlated	Correlation Coefficients (and Significance Levels)	
	Percent of Total Population Living in Primate City	Percent of Urban Population Living in Primate City
Total Population in 1990	-.476 (.085)	-.480 (.083)
Rates of Natural Increase	-.319 (.267)	-.089 (.763)
Total Fertility Rates	-.380 (.181)	.069 (.815)
Life Expectancies at Birth	.263 (.363)	-.108 (.714)
Per Capita Gross National Product	.813 (.002)	.177 (.603)

Population Density (People Per Square Mile)	-.270 (.350)	.241 (.407)
Percentages Urban	.503 (.066)	-.648 (.012)
Correlation Coefficient for percent of total population that lives in the primate city with percent of the urban population living in the primate city = .281 (Sig. = .330)		

described for the smaller towns. But as these cities have grown and evolved over time their internal structures have become more complicated. For instance, as they spread out spatially over the landscape, their street patterns have taken on more irregular shapes, so that as one leaves the older city center the more orderly rectangular grid pattern normally gives way to streets with angular intersections and winding characteristics.

In larger West Indian cities new business centers have been developed that provide competition for the older core areas, so a multiple nuclear pattern has sometimes emerged. For instance, in Jamaica the business districts of New Kingston and Half Way Tree now compete with Old Kingston, as do some of the ribbon developments along Old Hope Road. In Pointe-a-Pitre, Guadeloupe a newer business district has developed inland that has taken over some of the functions of the old city core. In Puerto Rico, newer commercial developments in Santurce, Hato Rey, and Rio Piedras afford competition for Old San Juan. Even Nassau, in the Bahamas, now has several peripheral shopping centers.

As the larger cities continue to grow, the old colonial town pattern in which the wealthier residents lived near the center of town and the poor on the outskirts has been somewhat reversed. Now most members of the wealthy and middle classes live in suburban areas, often on ridges and hills with good views. Usually the higher and middle income neighborhoods exhibit wedge patterns such as those suggested by the Hoyt model (Hoyt 1939; Conway 1983; Potter 1989e) and the population has become more segregated along economic and social class lines. The residential areas around the old central business district (CBD) have deteriorated over time into slum tenements. Squatter settlements and shanty towns (to be discussed later in this paper) occupy large amounts of land in both peripheral areas and in zones of disamenities, as suggested in a recent model of Latin American cities (Griffin and Ford 1980). But it is incorrect to suggest that there is a simple inverted social gradient leading away from the old city center because peripheral areas are frequently occupied by all social classes, albeit in a well-defined segregated pattern. **[end p. 78]** As an example, in both Kingston and Montego Bay, Jamaica some of the poorest shanty towns are located in gullies on the peripheries of these two cities, while on the nearby hilltops reside wealthy residents, with middle classes living in between them (Eyre 1972, 1979, 1983).

As suburbanization has progressed, the larger central cities have often begun to experience a population decline or very slow growth rate. As in North American cities, it is the suburbs that are growing most rapidly. Clearly, this is happening in Barbados (Potter 1989e), Trinidad (Conway 1989), Puerto Rico (Boswell 1989b, de Albuquerque and McElroy 1989), and in the Bahamas (Boswell and Biggs 1989).

Obviously, there are exceptions to almost every generalization that has been made above,

regarding the morphology of Caribbean cities. As an example, Bridgetown, Barbados does not have a central square, nor does it have the classical grid street pattern in its old core area (Potter 1989e). The settlement of Freeport-Lucaya, established during the 1960s as the second largest city in the Bahamas, also does not conform to some of the above patterns because of its planned nature, nor does the suburban division of Kingston known as Portmore, which was created during the 1970s.

EMPLOYMENT IN CARIBBEAN CITIES

Classical Western economic theory used to argue that as a country modernizes and its population becomes increasingly concentrated in urban areas, its economy will pass through well-defined stages similar to those experienced by the MDCs when they were first developing (Rostow 1978). Among other things, it was assumed that a sectoral shift would take place in the country's employment structure that would include three phases, the first dominated by agriculture, the second by manufacturing, and the third by employment in the services (Fisher 1933, Clarke 1957). But figures for the Caribbean during the 1960 to 1980 period clearly indicate that this model does not apply here (Hope 1986). As urbanization has occurred, there has indeed been a shift in employment out of agriculture. But the increase in manufacturing employment has been much less than predicted. Today only about one-third of the West Indian labor force is employed in the manufacturing sector, compared with almost twice that percentage in the MDCs.[(9)] Most of the slack caused by the decline in agriculture has been absorbed by the service sector. For instance, while Jamaica's percentage employment in agriculture during this period dropped from 39 to 21 percent, its employment in the services increased from 36 to 54 percent, and its employment in industry remained at a constant 25 percent (Hope 1986).

The low level of manufacturing employment in the Caribbean can be traced historically to the dependency relationship established between the West Indian territories and their European colonizers, as previously noted in this paper. Its significance for Caribbean cities is that their industrial sectors have not been able to create enough jobs to absorb the population growth that has occurred in them. As a consequence, unemployment rates have soared to levels that are between 20 and 30 percent of the labor forces in the West Indies. This problem is even greater in the cities, where unemployment percentages are frequently 50 to 100 percent higher than in rural areas.[(10)]

Caribbean governments have tried to remedy the unemployment problem by encouraging growth of both manufacturing and tourism, although the degree of emphasis on each has varied among the individual territories. For instance, the Cayman Islands have emphasized tourism, Trinidad put its greatest efforts into manufacturing, and others, such as Puerto Rico and the Bahamas, have tried to promote both. Because of advantages of market and labor force sizes and infrastructure concentrations it is the cities, especially the larger ones, that have usually benefitted most from this activity, although there are some exceptions to this statement. But much of the capital for these investments has derived from foreign sources, and most of the profits have returned there as a result. Manufacturing development planning in Caribbean cities has focused on the strategies of "import substitution" and "industrialization by invitation" (Boswell 1989a). Although thousands of jobs have been created throughout the West Indies in both

manufacturing and tourism, not nearly enough have been established to solve the unemployment and underemployment problems in the cities. One consequence of the insufficient growth of jobs in industry and tourism has been an explosive growth in the "informal" or "petty-capitalist" sector of economies of most West Indian cities. Like in most other Third World cities, these are small-scale enterprises that have low capital requirements. Employment is often only part-time or temporary, hours of work may be irregular, salaries are low, and social security benefits and pensions are unheard of. Often an employment license is not obtained and taxes are not paid. Frequently, the activity involved is illegal. In short, these are the least desirable jobs in the city in terms of socioeconomic levels. They include such professions as street selling, handyman repair work, itinerant traders, some food preparation, petty manufacturing, household services, shoe-shiners, selling of illicit drugs, prostitution, **[end p. 79]** and crime. Because of the low pay and often irregular employment many people who work in this sector must string together a number of these jobs to be able to support themselves and their families (Clarke 1974). Although important in most Caribbean cities, the degree of dependence upon the informal sector varies greatly among the islands. It is estimated (Clarke 1989) that perhaps half of Kingston's labor force is working in petty capitalist activities, but only about 5 percent of Nassau's work force is similarly employed (Boswell and Biggs 1989).

HOUSING THE POOR IN CARIBBEAN CITIES

After the Second World War, as natural increase and rural-to-urban migration swelled the populations of its major cities, urban housing stocks in the Caribbean were strained beyond their capacities and severe shortages occurred. Today, one of the biggest problems facing West Indian cities is that of housing the poor.

The urban poor of the West Indies are generally housed in three types of accommodations, namely tenements, shanty towns, and public housing projects. Tenements are comprised of old housing that was originally constructed for people who were economically better off than those who occupy them now. Through time their condition has deteriorated and their units have become subdivided, so now two or three families occupy the space where one used to live before they have filtered down to the poor. In Spanish-colonized cities like Havana, San Juan, and Santo Domingo multi-storied concrete structures are common, but in the British, Dutch, and French territories single-storied wooden structures are more customary. Tenements are usually clustered near the original core of the city and are the type of housing that comes closest to approximating a "slum" in North America or Western Europe (Clarke 1974; Potter 1985; Drakakas-Smith 1987).

Shanty towns are defined more by the substandard materials from which they have been built, such as scraps of wood, flattened tin cans, straw matting, cardboard, and even plastic bags. It is common to distinguish between two types of shanty towns, squatter settlements and rent yards. Squatter settlements originate through illegal occupation of unoccupied land, usually in zones such as ravines, gullies, steep slopes, abandoned land within the city, and unused land on its periphery. Rent yards are similar in terms of their physical fabric, but differ from squatter settlements because someone claims ownership of the land and rents it to tenants who are free to construct their own dwellings. Most squatter settlements eventually evolve into rent yards, if

they are not removed by authorities (Eyre 1984a).

The lack of legal title gives squatter settlements a precarious nature, and it has been common in the past for West Indian governments to eradicate them periodically. But, since the early 1970s this attitude has changed. Now most governments recognize the benefits and economies of allowing the poor to help themselves through "squatter autoconstruction" projects (Dickenson 1983). Three major types of self-help programs have been recognized by Potter (1985). The one most frequently encountered throughout the Caribbean, because it is the least expensive, is the upgrading of existing facilities. Usually, this involves infrastructure improvements such as installing community water standpipes and sewers. Site and service projects represent a second type of program, where new land is cleared, lots are surveyed, roads are built, sewer lines are extended, and title is provided to former squatter settlement residents. It is up to the new resident to build his own house and any other structures he needs. This method has been tried with some success in Jamaica and on some of the islands in the eastern Caribbean. The final type of self-help program has been used in Puerto Rico, the U.S. Virgin Islands, and the Bahamas and involves the provision of core housing to the poor. It includes all the infrastructure of site and service projects, plus a small two- or three-room house that can be added to and extended by the new owner as his economic conditions allow. Below market interest rates are made available to the resident through government-sponsored mortgages. Its main drawback, however, is that it is the most expensive of the three types of programs, which limits the number of poor families that are able to benefit from this type of assistance (Ward 1982; Turner 1982; Skinner and Rodell 1983).

It has been stated in the literature that shanty towns do not house as high a percentage of the city populations in the West Indies as they do in other parts of the Third World (Clarke 1974). If it is correct that an average of between 25 and 50 percent of a typical LDC city lives in this type of housing (Hope 1986), this statement may no longer be true. Over 60 percent of Santo Domingo's residents are estimated to be living in slums and squatter settlements (Dickenson 1983). At least as large a percentage of Port-au-Prince's population must be living in the massive shanty towns of that city. During the late 1970s it was estimated that a little over one-fourth of Kingston's population resided in similar settlements, whereas the comparable proportion for Montego Bay was about two-thirds (Clarke 1989; Norton 1978). On the other hand, very few shanty towns are found in the Bahamas, Puerto Rico, **[end p. 80]** the Cayman Islands, and the Netherlands Antilles. The truth is there is a tremendous amount of variation among the island territories in the Caribbean when it comes to housing quality.

The literature dealing with the formation and maintenance of squatter settlements suggests that there are some differences between the processes that apply in the Caribbean and those characteristic in most of Latin America. Much of the squatting that takes place in mainland Latin America is well-planned, sudden, and a group effort involving many families invading vacant land at the same time. But in the Caribbean, squatting is normally an unorganized and slow process that usually involves the in-migration of only single families at a time. Furthermore, in Latin America the physical and social nature of these settlements improves over time, so that within a decade or two many homes have risen almost to middle-class status in terms of their physical character (Mangin 1967). But in the West Indies they always seem to house the poor

and the physical quality of the housing reflects this status. If the resident of a shanty town experiences economic success in a Caribbean city, he normally moves his family out to some place else and either sells or rents his former residence to another poor family (Eyre 1984a; Clarke 1974).

All West Indian governments maintain housing agencies, but public funds are simply not sufficient to rehouse all tenement or shanty town residents. Multi-story public apartment units have been built with government funds in such cities as San Juan, Havana, Fort-de-France, Pointe-a-Pitre, and Charlotte Amalie (Potter 1989d). Unfortunately, such projects rarely have provided the desired solutions to the urban housing problems in these cities because they tend to be expensive and are most often located on the periphery of the cities, away from the jobs and social services needed by the poor for whom they intend to provide housing. Perhaps, however, it is most important to note that better housing does not change the relative position of the poor (Drakakis-Smith 1987). They are still the most disadvantaged residents of the cities in which they live.

Since the early 1970s, Cuba has employed its well-known "micro-brigades" to solve its housing problems, especially in Havana. The "brigades" are squads of around 25 to 30 workers who have been released from their usual jobs to assist in the volunteer construction of new housing for their fellow workers. The structures they build are most often blocks of four- or five-story walk-ups containing 20 to 30 apartments. Workers who remain at their normal jobs, instead of working with the "brigades", agree to work overtime to compensate for the absence of their colleagues. The construction sites of these projects are usually close to the employment center, so that when they are completed, they will be more conveniently located for the workers who will subsequently be living in them. But, like most large-scale plans in Cuba, the "micro-brigades" have encountered problems. The workers, who are inexperienced in building houses, tend to do low quality work. And yet they are a relatively expensive labor force because they continue to receive the wages they were receiving on their regular jobs (Hall 1989). Still, since 1979 the "brigades" have produced more than half the new housing constructed in Havana (Potter 1985).

THE PROBLEM OF URBAN CRIME IN THE CARIBBEAN

The rapid population growth that has generated the high unemployment rates and housing crisis referred to earlier in this paper, also has been at least partly responsible for an increasing rate of crime in the Caribbean. Although little has been written in the professional literature, almost everyone agrees that the problems of violence and crime have risen dramatically in the West Indies during the past 20 years, as has been the case throughout the rest of the world. Furthermore, it is equally clear that this problem is much more severe in the cities than in the rural areas (Hope 1986). For instance, in Guyana the crime rate in Georgetown is almost 70 percent higher than it is in rural areas (Strachan 1989). In the Bahamas for the ten-year period between 1977 and 1986, the rate for crimes against persons was almost seven times higher in Nassau than it was in the rural areas. The ratio for property crimes was three to one, lower but certainly very significant (Boswell and Biggs 1989).

Why should crime rates be so much higher in the cities, than in rural areas of the Caribbean?

Hope (1986) suggests that it is primarily because in rural areas people tend to know one another more than in the cities. Also, in rural areas there is more likely to be someone at home watching the house and its contents. In cities there is greater anonymity and both husbands and wives are more likely to away from the home working, shopping, or attending school. Thus, there is a greater overall opportunity for burglary and robbery in urban areas (Boswell and Biggs 1989).

One interesting but tragic type of urban violence that has occurred in Jamaica is of a political nature. It involves partisan fighting between followers of the country's two leading political parties over territory located mainly in Kingston's poor neighborhoods. For example, during the late 1970s and early 1980s gang violence, **[end p. 81]** murder, and arson completely destroyed one small 500 acre neighborhood in West Kingston, displacing some 21,400 residents. Another 130,000 people who had lived in the shanty towns and slums of Lower Kingston fled the area in the late 1970s to establish a "refugee" movement to the more peaceful outer suburbs of the capital and to nearby towns such as Spanish Town and May pen (Eyre 1984, 1986a, 1986b). Fortunately, an agreement was reached between the leaders of the two competing parties, so since the early 1980s the level of violence has subsided, at least for the time being.

THE USE OF MENTAL MAPS IN THE CARIBBEAN

It can been argued that although planning agencies have been in operation in some parts of the Caribbean since the 1940s and 1950s, they have largely acted as bureaucratic agencies that have not been sensitive to the opinions and perceptions of the local populations (Clarke 1974). Potter suggests that one way of involving the public in planning decisions (referred to as "participatory planning") is to perform surveys using mental mapping techniques. The use of such perception studies will help planners to learn and become more sensitive to public opinions. With this thought in mind, during the early 1980s he undertook two pilot studies using questionnaire survey techniques to determine the spatial preferences and opinions of persons living in towns in Barbados and Trinidad (Potter 1985).

Some of Potter's mental map findings were similar to those of Gould and White in their studies of secondary and university students in Great Britain and the United States (Gould and White 1974). For instance, he determined that there was a clear local bias in the respondents' mental maps, in which they exhibited a strong preference for their home areas on both islands. Thus, residents of St. Peter Parish in Barbados exhibited the strongest preference for living there and respondents from the town of Sangre Grande in Trinidad showed a preference for living where they were, just like most students in the United States who exhibited a favorable bias towards the states in which they were living in the studies conducted by Gould and White (1974).

Potter also determined a moderate urban bias in his two studies. In Trinidad the strongest preference, when considering the respondents for all four study sites together, was shown for living first in the city of Port of Spain, and secondly for San Fernando. In Barbados, the results for all respondents were somewhat more complicated because there was no predilection shown for its capital city of Bridgetown, but instead the strongest preferences were shown for three parishes that were located next to or near the Parish containing Bridgetown. In other words, the most desired areas for residence were in the suburbs of Bridgetown, rather than central city

itself. This finding is similar to the preference in U.S. cities for suburban residence.

Although Potter found a moderate correlation ($r^2 = .49$) between residential preferences and an objective measure of socioeconomic ranks, he noted that the association was far from absolute. Therefore, he inferred that the two variables were enough different to warrant separate consideration of preferences. Then he correlated his preference variable with both long term and recent population changes in the parishes. Both these correlations were also moderate (r^2s = .59 and .49, respectively), suggesting that place images are associated with migration behavior in Barbados. From this finding he was able to argue that because preferences and objective measures of socioeconomic status were not the same, and because preference images were significantly correlated with migration behavior, mental maps provided useful information that was not otherwise available.

In an attempt to determine the specific factors affecting these preferences, Potter asked his respondents what they liked the best and least about Bridgetown and Port of Spain. The findings for Bridgetown were particularly enlightening because, surprisingly, although most Barbadians did not want to live in this central city, they did not think it was too big, nor was its pace of life overly hectic. What they found most objectionable were such characteristics as the city's crowded conditions, traffic congestion, noise, and air pollution (Potter 1985). The significance of these findings is that Potter was able to show that Barbadians were not concerned about the size of Bridgetown, but instead were more disturbed by its poor internal design. This is a problem that can be corrected without necessarily decentralizing and dispersing the population away from the Bridgetown metropolitan area. This was a very important finding because he was then able to show that the urban settlement plan that was then in effect, which was based on an application of Christaller's central place theory, was ill-advised. Instead, he recommend a less ambitious plan that called for less decentralization and greater use of the island's infrastructure than already existed. In 1983 the older settlement plan was discarded and most of Potter's suggestions were incorporated into a new settlement design that serves as the base for all urban planning today in Barbados (Potter 1989e). Thus, through use of his mental map investigations and other work, Potter perhaps has been able to influence urban **[end p. 82]** planning to a higher degree than any other geographer who has worked in the Caribbean since Rafael Pico founded and directed the Puerto Rico Planning Board during the 1940s and 1950s.

CONCLUSIONS

This paper has demonstrated that the processes of urbanization and the characteristics of cities in the Caribbean differ in several key respects from those found in North American cities. First, due to higher rates of natural increase and the added boost of rural-to-urban migration, cities in the West Indies are growing at an average of about two to three times as fast as those in North America. Thus, while most metropolitan areas in the United States were growing at annual rate between one and two percent, West Indian cities were growing at rates of closer to three percent during the 1980s (Frey 1990). Second, the urban systems in the Caribbean are characterized by higher levels of primacy, where the largest city dominates the rest of the towns in virtually every respect. Third, due primarily to the mercantile colonial history of this area, the cities of the Caribbean have never been characterized by as much manufacturing activity as those in North

America. This has proven to be a crucial factor in affecting a fourth important difference. When North America was being transformed from a rural to predominantly urban society, the processes of agricultural modernization and industrialization occurred concurrently. Thus, as economically redundant, former rural residents moved to the cities there were jobs available for them in the new factories that were being built at that time. In the Caribbean this has not been the case and, as a consequence, unemployment levels are much higher in West Indian cities than in urban areas of the United States. To understand the severity of this problem it is relevant to note that the unemployment rates being experienced in cities in the Caribbean today are as high or higher than those that prevailed during the Great Depression that occurred in North America during the late 1920s and early 1930s.

A fifth difference between Caribbean and North American cities has to do with the ways in which the poor living in West Indian cities have learned to cope with their lack of employment opportunities in the formal sector of their island economies. In most of the cities they have swelled the ranks of the informal or petty capitalist sector. Although differences exist among the individual islands, a much larger share of the labor forces of the cities in the Caribbean are involved in activities of this nature. This is especially true in the poorer island territories. However, it is probably correct to state that there is only a small proportion of the labor force in Caribbean cities that is truly unemployed. For instance, Clarke (1989) states that "The high and rising rate of unemployment in Kingston [Jamaica] during the last 50 years is a measure of undeclared employment in the informal sector." Since there is no social security or unemployment compensation system on most of the islands, the unemployed cannot remain idle indefinitely. With jobs unavailable in the formal sector, a subculture has emerged that derives its living from socially denigrated or illegal activities that usually escape enumeration in labor force surveys and censuses.

The greater incidence of poverty in West Indian cities is also reflected in the prevalence of shanty towns, which is a sixth major difference between Caribbean and North American cities. Perhaps, this is the single most visible difference between cities in these two regions. As stated earlier in this paper, the West Indian governments simply do not have enough money to solve this problem by themselves. As a result, most are turning from a policy of eradicating shanty towns to one of "self improvement," whereby the government encourages the squatters to spend their own money and efforts on upgrading their homes with some government assistance. The level of assistance provided by the governments varies greatly from island to island, but one crucial fact seems clear; it is only with the chance of owning legal title to the plots on which the homes are located that significant progress is likely to be achieved (Potter 1985). Without ownership, and with the threat of being evicted from the land on which they are living, there is no incentive to improve the quality of the homes in which these poor people reside.

As far as the future of urbanization in West Indian cities is concerned, there are several comments that can be made. For instance, it is likely that both the average rate of urbanization and urban growth will slow down, at least somewhat, in the near future. Kingsley Davis suggests that there is an upper limit to which urbanization extends through time in most countries. This asymptote is usually somewhere between 75 and 85 percent (Davis 1965). Also, Drakakis-Smith (1987) has shown that there is a negative relationship between urban growth rates and GNP

growth rates. The typical trend of urbanization, followed by most western countries as they experience economic growth, has been that of an S-shaped logistic curve. As the percentage urban increases over time, it does so in an accelerated manner until it reaches a level of about 50 percent. Thereafter, the rate of increase decelerates, until the percent urban remains stable or slightly declines after rising to between 75 and 85 percent (Potter 1985). **[end p. 83]**

The implication of this model for the Caribbean is that most of those countries that have levels of urbanization below 50 percent in this region can be expected to continue to experience high rates of increase in their cities. But those countries with rates well above the 50 percent level, such as Guadeloupe, Martinique, the Bahamas, and Puerto Rico (Figure 2), will experience a decline in their rates of urbanization. This reduction will occur for three reasons. First, as the rural population growth slows in these countries, there will be fewer people to move to the cities. Second, the process of suburbanization (some of which will expand into rural areas) will reduce the pressure for growth in the central cities of the major metropolitan areas. Finally, there is every indication that fertility is declining throughout the Caribbean (Segal 1975a, 1975b). This will reduce the rates of natural increase in both rural and urban areas of the islands in the West Indies. Therefore, it is to be expected that the rates of growth of Caribbean cities will be reduced in the future, so they will more closely approximate those of North American cities, although they will certainly remain higher for the immediate future.

Notes

1. Sometimes the three northern territories of Guyana, Surinam, and French Guiana located in South America and the independent country of Belize (formerly British Honduras) on the Yucatan Peninsula are included in discussions of the Caribbean because of their non-Spanish colonial history and cultural affinities with western European countries.

2. The term "urbanization" is used here as a proportional concept, in the sense that it refers to the percentage of a country's total population living in urban settlements. However, as in other major world regions, "urban" populations are defined by their individual island governments in the Caribbean in different ways. For instance, in the Bahamas only Nassau and Freeport-Lucaya are considered as being urban (Boswell and Biggs, 1989). Both Puerto Rico and Jamaica, on the other hand, use minimum population size in their definitions. But their thresholds vary, being 2,500 for Puerto Rico and 2,000 in Jamaica (Clarke, 1989). Cuba uses both minimum size and function criteria (Hall, 1989).

3. The terms "Caribbean" and "West Indies" are used as synonyms in this paper, although the latter term has been used in a more restricted way in some other studies to include only the current or former British colonial possessions in this region.

4. Significance has been defined as a probability of occurrence by chance of less than 10 percent. Although this is higher than the usual thresholds of .05 or .01, because the number of islands for which comparable data is so small, it is more difficult to achieve a significant correlation coefficient with such a small sample size. Thus, none of the coefficients shown in Table 3 are significant at either the .05 or .01 alfa levels.

5. It is logical to ask if per capita GNP and total fertility rates are highly correlated in the Caribbean. If they are, they might be measuring the same concept. But their correlation coefficient was found to be only very moderate ($r^2 = .291$), suggesting only minimal redundancy.

6. Many residents of Spanish Town commute to work, or for other purposes, to Kingston. The distance between the two cities is less than nine miles and only about 15 minutes in driving time (if rush hours are avoided).

7. One other common measure of levels of primacy is to divide the population of a country's primate city by the combined populations of its next three largest cities (Boswell,1989b). This measure has not been used here because some of the eastern Caribbean countries listed in table 3 do not have three other urban settlements, thus restricting the comparison possibilities.

8. As was the case for the correlation coefficients displayed in Table 3, a level of significance of alpha = .10 has been set.

9. This does not mean that one-third of the West Indian labor force works in factories because that figure is certainly much lower than this. Instead, it indicates that about 33 percent of the labor force performs some work for the manufacturing sector, such as serving as an accountant, truck driver, advertising agent, secretary, as well as working in factories. It is important here to keep in mind the distinction is between type of **occupation** and **industry** of employment.

10. Some of the difference between rural and urban unemployment rates is not "real" because it is related to "disguised" unemployment in rural areas due to underemployment (Boswell, 1989a).

References

Acosta, M. and J. Hardoy. 1973. *Urban reform in revolutionary Cuba.* In Reform in Revolutionary Cuba. Occasional Paper No. 1, New Haven, CT: Antilles Research Program, Yale University.

Barkin, D. 1980. Confronting the separation of town and country in Cuba. *Antipode* 12:31-40.

Barry, T., B. Wood, and D. Preusch. 1984. *The other side of paradise: Foreign control in the Caribbean.* New York: Grove Press.

Beckford, G. L. 1975. Caribbean rural economy. In *Caribbean Economy: Dependence and Backwardness.* Ed. by G. L. Beckford. Mona, Jamaica: Institute of Social and Economic Research.

Beekhuis, J. 1981. Tourism in the Caribbean: Impacts on the economic, social and natural environments. *Ambio* 10:325-331.

Belize Ministry of Education. 1984. *Belize today - A society in transformation*. Belize City: Sunshine Books, Ltd.

Bertile, W. 1985. *Le logement dans les departements d'outre mer.* Paris: La Documentation Francaise.

Bolland, O. N. 1986. *Belize: A new nation in Central America*. Kingston, Jamaica: Institute of Social and Economic Research, University of the West Indies.

Boswell, T. D. 1978. Internal migration in Puerto Rico prior to economic development. *Social and Economic Studies* 27:434-463.

_____. 1983. In the eye of the storm: The context of Haitian migration to Miami, Florida. *Southeastern Geographer* 23:57-77.

_____. 1986. The characteristics of internal migration to and from New Providence Island (Greater Nassau), Bahamas 1960-1970. *Social and Economic Studies* 35:111-150.

_____. 1989a. Economic geography of the present-day West Indies. In *Middle America: Its lands and peoples*. Ed. by R. C. West and J. P. Augelli, 80-102. Englewood Cliffs, NJ: Prentice-Hall.

_____. 1989b. Population and Political Geography of the Present-Day West Indies. In *Middle America: Its lands and peoples*. Ed. by R. C. West and J. P. Augelli, 103-127. Englewood Cliffs, NJ: Prentice-Hall.

_____. 1989c. The West Indies: The Hispanic territories and Haiti. In *Middle America: Its lands and peoples*. Ed. by R. C. West and J. P. Augelli, 128-167. Englewood Cliffs, NJ: Prentice-Hall.

_____. 1989d. The West Indies: Jamaica, the Lesser Antilles, and the Bahamas. In *Middle America: Its lands and peoples*. Ed. by R. C. West and J. P. Augelli, 168-208. Englewood Cliffs, NJ: Prentice-Hall.

Boswell, T. D. and J. E. Biggs. 1989. The Bahamas. In *The geography of urban-rural interaction in developing countries*. Ed. by R. B. Potter and T. Unwin, 252-284. New York: Routledge.

Boswell, T. D. and A. K. Chibwa. 1979. A comparison of net migration patterns and their spatial correlates in Puerto Rico and the Bahamas during the 1960s. *Geographical Survey* 8:16-29.

Boswell, T. D. and A. K. Chibwa. 1981. *Internal migration in the Commonwealth of the Bahamas*. Nassau: Clyde-Berren Associates.

Bovier, L. F. 1983. *Barbados: Yesterday, today and tomorrow*. Washington, DC: Population Reference Bureau.

Boyer, W. 1983. *America's Virgin Islands: A history of human rights and wrongs*. Durham, NC: Carolina Academic Press.

Briggs, R. and D. Conway. 1975. The evolution of urban ecological structure: Theory and a case study, Port of Spain, Trinidad *Social Science Quarterly* 55:871-888.

Britton, S. and W. C. Clarke, eds. 1987. *Ambiguous alternative: Tourism in small developing countries*.

Suva: University of the South Pacific.

Bromley, R. 1979. *The urban informal sector*. London: Pergamon Press.

Broom, L. 1953. Urban research in the British Caribbean: A pro-spectus. *Social and Economic Research* 1:113-119.

Brundenius, C. 1984. *Revolutionary Cuba: The challenge of economic growth with equity*. Boulder, CO: Westview Press.

Bryden, J. 1973. *Tourism and development: A case study of the Commonwealth Caribbean*. New York: Cambridge University Press.

Butterworth, D. S. 1980. *The people of Buena Ventura: Relocation of slum dwellers in post revolutionary Cuba*. Urbana, IL: University of Illinois Press.

Capablanca, E. 1985. La Habana Vieja: Anteproyecto de restauracion. *Ciudad y Territorio* 57-64.

Clarke, C. 1957. *The conditions of economic progress*. London: Macmillan and Company.

_____. Population pressure in Kingston, Jamaica: A study of unemployment and overcrowding. *Transactions of the Institute of British Geographers* 38:165-187.

_____. 1974a. *Jamaica in maps*. London: University of London Press.

_____. 1974b. Urbanization in the Caribbean. *Geography* 59:223-232.

_____. 1975a. *Kingston, Jamaica: Urban development and social change*. Los Angeles, CA: University of California Press.**[end p. 84]**

_____. 1975b. The Commonwealth Caribbean. In *Essays of world urbanization*. Ed. by R. Jones, 341-351. London: George Philip & Son, Ltd.

_____. 1975c. Ecological aspects of population growth in Kingston, Jamaica. In *Geographical analysis for development in Latin America and the Caribbean*. Ed. by R. P. Momsen, Jr. Chapel Hill, NC: Conference of Latin Americanist Geographers.

_____. 1980. Stasis in makeshift housing: Perspectives from Mexico and the Caribbean. *Comparative Urban Research* 8:117-127.

_____. 1983. Dependency and marginality in Kingston, Jamaica. *Journal of Geography* 82:227-235.

_____. 1984. Pluralism and plural societies: Caribbean perspective. In *Geography and Ethnic Pluralism*. Ed. by C. Larke, D. Ley, and C. Peach, 51-86. London: Allen and Unwin.

_____. 1986. *East Indians in a West Indian town: San Fernando, Trinidad, 1930-70*. London: Allen and Unwin.

_____. 1989. Jamaica. In *Urbanization, Planning, & Development in the Caribbean*. Ed. by R. B. Potter, 21-48. New York: Mansell.

Cole, W. E. and R. D. Sanders. 1985. Internal migration and urban employment in the third world. *American Economic Review* 75: 481-494.

Conway, D. 1976. Residential area change and residential relocation in Port of Spain, Trinidad. Ph.D. Dissertation, University of Texas.

_____. 1980. Step-Wise migration: Toward a clarification of the mechanism. *International Migration Review* 14:3-14.

_____. 1981. Fact or opinion on uncontrolled peripheral settlement in Trinidad: Or how different conclusions arise from the same data. *Ekistics* 286:37-43.

_____. 1982. Self-Help housing, the commodity nature of housing and amelioration of the housing deficit: Continuing the Turner-Burgess debate. *Antipode* 14:40-46.

_____. 1983. The commuter zone as a relocation choice of low income migrants moving in a step-wise pattern to Port of Spain, Trinidad. *Caribbean Geography* 1:89-106.

_____. 1989. Trinidad and Tobago. In The geography of urban-rural interaction in developing countries. Ed. by R. B. Potter and T. Unwin, 49-76.<

Conway, D. and J. Brown. 1980. Intraurban relocation and structure: Low-Income migrants in Latin America and the Caribbean. *Latin American Research Review* 15:95-125.

Craton, M. 1979. *A history of the Bahamas*. Nassau: San Salvador Press.

Cross, M. 1979. *Urbanization and urban growth in the Caribbean*. New York: Cambridge University Press.

Dann, G. 1984. *The quality of life in Barbados*. London: Macmillan.

Davis, K. 1965. The urbanization of the human population. *Scientific American* 213:40-53.

De Albuquerque, K., P. Mader, and W. Stinner. 1976. Modernization, delayed marriage, and fertility in Puerto Rico: 1950 to 1970. *Social and Economic Studies*. 25:55-65.

De Albuquerque, K. and J. McElroy. 1981. Residential patterns in United States Virgin Islands, 1917-1976. *South Atlantic Urban Studies* 5:287- 303.

_____. 1982. West Indian migration to the U.S. Virgin Islands. *International Migration Review*

16: 61-101.

_____. 1985. Race and ethnicity in the U.S. Virgin Islands. *Ethnic Groups* 6:41-96.

_____. 1989. Puerto Rico and the United States Virgin Islands. In *The geography of urban-rural interaction in developing countries*. Ed. by R. B. Potter, 285-315. New York: Routledge.

De Albuquerque, K., W. Van Riel, and J. J. Taylor. 1980. Uncontrolled urbanization in the developing world: A Jamaican case study. *Journal of Developing Areas* 14:361-386.

Del Aguila, J. 1984. *Cuba: Dilemmas of a revolution*. Boulder, CO: Westview Press.

Department of Urban and Regional Development Planning and Housing. 1986. *Revitalizing downtown Willemstad: Executive summary*. Curacao, Netherlands Antilles: Department of Urban and Regional Development.

Dickenson, J. P., et al. 1983. *A Geography of theThird World*. New York: Methuen.

Dietz, J. 1986. *Economic history of Puerto Rico: Institutional change and capitalist development*. Princeton, NJ: Princeton University Press.

Dodd, D. J. and M. Parris. 1977. An urban plantation: Socio-Cultural aspects of crime and delinquency in Georgetown, Guyana. *International Journal of Criminology and Penology* 5: 32-61.

Doran, M. F. and R. A. Landis. 1980. Origin and persistence of an inner-city slum in Nassau. *Geographical Review* 70:182-193.

Drakakis-Smith, D. 1981. *Urbanization, housing and the development process*. London: Croom Helm.

_____. 1987. *The third world city*. New York: Methuen.

Dyer, D. R. 1957. Urbanism in Cuba. *Geographical Review* 47:224-233.

Dupuch, S. P. 1988. *Bahamas handbook*. Nassau: Etienne Dupuch, Jr. Publications.

Edwards, M. 1979. Urban and Rural Planning in Cuba: The second decade. Ed. by J. Griffiths and P. Griffiths, London: Writers and Readers Publishing Group.

Encyclopedie van de Nederlandse Antillen. 1985. De Walburg Pers, Zutphen, Willemstad, Curacao, Netherlands Antilles.

Evans, F. C. and R. N. Young. 1976. *The Bahamas*. London: Cambridge University Press.

Everitt, J. C. 1984. Belmopan, dream and reality: A study of the other planned capital in Latin America. *Revista Geografica* 99: 135-144.

_____. 1985. The growth and development of Belize City. *Journal of Latin American Studies*. 18:75-111.

Eyre, L. A. 1972. Shanty towns of Montego Bay, Jamaica. *Geographical Review* 62:394-413.

_____. 1979. Quasi-Urban melange settlements. *Caribbean Review* 8:32-35.

_____. 1983. The ghettoization of an island paradise. *Journal of Geography* 82:236-239.

_____. 1984a. The internal dynamics of shanty towns in Jamaica. *Caribbean Geography* 1:256-271.

_____. 1984b. Political violence and urban geography in Kingston, Jamaica. *Geographical Review* 74:24-37.

_____. 1986a. The effects of political terrorism on the residential location of the poor in Kingston Urban Region, Jamaica, West Indies. *Urban Geography* 7:227-242.**[end p. 85]**

_____. 1986b. Party political violence and the struggle for residential space in Jamaica. *Nederlandse Geografische Studies* 25:125-139.

Fanger, U. 1978. Urban policy implementation in the Dominican Republic, Jamaica, and Puerto Rico. *Ekistics* 45:20-29.

Farazli, C. and T. Leathem. 1987. *Belize City: Background planning study*. Montreal: School of Urban Planning, McGill University.

Farrell, T. M. A. 1982. *Small size, technology and development strategy*. Research Paper No. 4, Department of Economics, University of the West Indies, St. Augustine, Trinidad and Tobago.

Fisher, A. G. B. 1933. Capital and the growth of knowledge. *Economic Journal* 374-389.

France, Republic of. 1985. *St. Vincent and the Grenadines: Economic, financial and social situation*. Paris, France: Ministry of Foreign Relations, Co-operation and Development.

Frey, F. H. 1990. Metropolitan America: Beyond the transition. *Population Bulletin* 45. Washington, DC: Population Reference Bureau.

Friedmann, J. 1966. *Regional development policy: A case study of Venezuela*. Boston, MA: The M.I.T. Press.

Gastmann, A. L. and S. MacDonald. 1989. The French West Indies. In *The geography of urban-rural interaction in developing countries*. Ed. by R. B. Potter and T. Unwin, 237-251. New York: Routledge.

Gilbert, A. and J. Gugler. 1982. *Cities, poverty, and development: Urbanization in the third world*. New York: Oxford University Press.

Gill, R. ed. 1983. *Housing in the Netherlands Antilles*. Willemstad, Curacao: University of the Netherlands Antilles.

Gould, P. R. and A. Lyew-Ayee. 1983. Jamaican television: Images and geographic connections. *Caribbean Geography* 1:36-50.

Gould, P. R. and R. White. 1974. *Mental Maps*. New York: Penguin Books.

Green J. W. 1972. The British West Indian alien labor problem in the Virgin Islands. *Caribbean Studies* 12:56-75.

Griffin, E. and L. Ford. 1980. A model of Latin American city structure. *Geographical Review* 70:397-422.

Grusky, S. 1987. The changing role of the U.S. military in Puerto Rico. *Social and Economic Studies* 36:37-76.

Gugler, J. 1980. A minimum of urbanism and a maximum of ruralism: The Cuban experience. *International Journal of Urban and Regional Research* 4:516-535.

_____. 1982. Overurbanization reconsidered. *Economic Development and Cultural Change* 31:173-189.

_____. 1988. *The urbanization of the third world*. New York: Oxford University Press.

Haggett, P. 1983. *Geography: A modern synthesis*. New York: Harper & Row.

Hall, D. R. 1981a. External relations and current development patterns in Cuba. *Geography* 66:237-240.

_____. 1981b. Town and country planning in Cuba. *Town and Country Planning* 50:81-83.

_____. 1989. Cuba. In *The Geography of urban-rural interaction in developing countries*. Ed. by R. B. Potter, 77-113. New York: Routledge.

Hamberg, J. 1986. The dynamics of Cuban housing policy. In *Critical Perspectives on Housing*. Ed. by R. Bratt, et al., 586-624. Philadelphia, PA: Temple University Press.

Hardoy J. E. and D. Satterthwaite eds. 1986. *Small and intermediate urban centres: Their role in regional and national development in the third world*. Boulder, CO: Westview Press

Heins, J. J. F. 1978. Spatial inequality in Guyana: A case study of Georgetown. *Tijdschrift voor Economische en Social Geografie* 69:36-45.

Honour, L. 1979. Jamaican development: Policies and practice. London: Bedford College, University of London, Papers in Geography, No. 7.

Honychurch, L. 1984. *The Dominica story: A history of the island*. Roseau: The Dominica Institute.

Hope, K. R. 1980a. The Caribbean tourism sector: Recent performance and trends. *Journal of Tourism Management* 1:175-183.

_____. 1980b. Rural development and social change. *Rural Development Digest* 3:1-7.

_____. 1982. The employment problem, rural-urban migration and urbanization in the Caribbean. *Population Review* 26:42-53.

_____. 1983a. Urban development and social change: A conceptual analysis of an American dilemma. Habitat International 7: 31-36.

_____. 1983b. Urban population growth in the Caribbean. *Cities* 1:167-174.

_____. 1984a. Unemployment, labour force participation, and urbanization in the Caribbean. *Review of Regional Studies* 14: 9-16.

_____. 1985. Urban population growth and urbanization in the Caribbean. *Inter-American Economic Affairs* 39:31-49.<

_____. 1986a. *Urbanization in the Commonwealth Caribbean*. Boulder, CO: Westview Press.

_____. 1986b. *Economic development in the Commonwealth Caribbean: Essays on growth and change*. New York: Praeger Publishers.

Hope, K. R. and T. Ruefli. 1981. Rural-Urban migration and the development process: A Caribbean case study. *Labour and Society* 6:141-148.

Hoyos, F. A. 1979. *Barbados: Our island home*. London: Macmillan.

Hoyt, H. 1939. *The structure and growth of residential neighborhoods in American cities*. Washington, DC: Federal Housing Administration.

Hudson, B. 1980. Urbanization and planning in the West Indies. *Caribbean Quarterly* 26:1-17.

_____. 1983. Grenada's new international airport. *Caribbean Geography* 1:51-57.

_____. 1986. Landscape as resource for national development: A Caribbean view. *Geography* 71:116-121.

_____. 1987. Tourism and landscape in Jamaica and Grenada. In *Ambiguous alternative: Tourism in small developing countries*. Ed. by S. Britton and W. C. Clarke, 46-60. Suva: University of the South Pacific.

_____. 1989. The Commonwealth Eastern Caribbean. In *Ambiguous alternative: Tourism in*

small developing countries. Ed. by S. Britton and W. C. Clarke, 181-211. Suva: University of the South Pacific.

Jefferson, M. 1939. The law of the primate city. *Geographical Review* 20:226-232.

Jones, A. 1987. The housing experience of Barbados. *Cities* 4:52-57.

Jones, H. R. 1977. Metropolitan dominance and family planning in Barbados. *Social and Economic Studies* 26:327-338.

_____. 1981. *Crime, race and culture: A study in a developing country*. Chichester: John Wiley & Sons.

Kearns, K. C. 1973. Belmopan: Perspective on a new capital. *Geographical Review* 63:147-169.

Knight, P. and O. Davies. 1978. An analysis of residential location patterns in the Kingston metropolitan area. *Social and Economic Studies* 27:403-433.**[end p. 86]**

Kowalewski, D. 1982. *Transnational corporations and the Caribbean*. New York: Praeger Press.

Lee, E. 1966. A theory of migration. *Demography* 3:47-57.

Lehmann, D. 1982. Agrarian structure, migration and the state in Cuba. In *State policies and migration: Studies in Latin America and the Carib bean*. Ed. by P. Peek and G. Standing. London: Croom Helm.

Lewis, G. 1972. *The Virgin Islands: A lilliput*. Evanston, IL: Northwestern University Press.

Loyd, P. 1979. *Slums of hope? Shanty towns of the third world*. New York: Penguin Books.

Lowenthal, D. 1957. The population of Barbados. *Social and Economic Studies* 6:445-501.

_____. 1972. *West Indian societies*. London: Oxford Uni-versity Press.

Lowder, S. 1986a. *The geography of third world cities*. Totowa, NJ: Barnes & Noble.

_____. 1986b. *Inside third world cities*. London: Croom Helm.

MacDonald, S. B. 1986. *Trinidad and Tobago: Democracy and development in the Caribbean*. New York: Praeger Press.

Mangin, W. 1967. Latin American squatter settlements: A problem and a solution. *Latin American Research Review* 2:65-98.

Marshall, D. I. 1979. *The Haitian problem: Illegal migration to the Bahamas*. Kingston, Jamaica: Institute of Social and Economic Research, University of the West Indies.

McElroy, J. and K. de Albuquerque. 1981. Residential patterns in the United States Virgin Islands, 1917-1970. *South Atlantic Urban Studies* 5:287-303.

_____. 1988. The migration transition in small northern and eastern Caribbean states. *International Migration Review* 33:30-58.

McElroy, J. and J. Tinsley. 1982. United States Virgin Islands. In *Tourism in the Caribbean: The Economic Impact*. Ed. by S. Seward and B. Spinrad, 23-65. Ottawa: International Development Research Centre.

Mulchansingh, V. C. 1983. Use of natural gas in Trinidad and the Point Lisas pole de croissance. *Caribbean Geography* 1:133-139. Myrdal, G. 1975. *Economic theory and underdeveloped areas*. London: Duckworth Publishers.

Norton, A. 1978. Shanties and skyscrapers: Growth in modern Kingston. Kingston: Institute of Social and Economic Research, University of the West Indies, Working Paper No. 13.

Ottley, C. R. 1970. *The story of Port of Spain*. Kingston, Jamaica: Longman Caribbean.

Paquette, R. 1965. Concentration and dispersal of settlements: Martinique and St. Lucia. Montreal: Master's Thesis, McGill University.

Peake, L. 1987. Guyana: A country in crisis. *Geography* 72:356-360.

Pearce, D. G. 1984. Planning for tourism in Belize. *Geographical Review* 74:291-303.

Pico, R. 1974. *The geography of Puerto Rico*. Chicago, IL: Aldine.

Population Reference Bureau. 1990. *1990 World population data sheet*. Washington, DC: Population Reference Bureau.

Potter, R. B. 1981. Industrial development and urban planning in Barbados. *Geography* 66:225-228.

_____. 1983a. Urban development, planning and demographic change 1970-80 in Barbados. *Caribbean Geography* 1:3-12.

_____. 1983b. Tourism and development: The case of Barbados, West Indies. *Geography* 68:44-50.

_____. 1983c. Congruence between space preferences and socio-demographic structure in Barbados, West Indies: The use of cognitive studies in third world urban planning and development. *Geoforum* 14:249-65.

_____. 1983d. How Barbadians perceive their environment. *The Bajan and South Caribbean* 357:40-41.

_____. 1983e. How Barbadians perceive planning issues. *The Bajan and South Caribbean* 360:30-31.

_____. 1984a. Mental maps and spatial variations in residential desirability: A Barbados case study. *Caribbean Geography* 1:186-197.

_____. 1984b. Perception research as input into urban planning in poor countries: A comparative project. *Perception and Environment* 4:4-5.

_____. 1984c. Spatial perception and public involvement in third world urban planning: The example of Barbados. *Singapore Journal of Tropical Geography* 5:30-44.

_____. 1985a. *Urbanisation and planning in the third world: Spatial perceptions and public participation*. New York: Croom Helm and St. Martin's Press.

_____. 1985b. Environmental planning and popular participation in Barbados and the Eastern Caribbean: Some observations. *Bulletin of Eastern Caribbean Affairs* 11:24-30.

_____. 1986a. Spatial inequalities in Barbados, West Indies. *Transactions of the Institute of British Geographers* 11:183-198.

_____. 1986b. Physical development or spatial land use planning in Barbados: Retrospect and prospect. *Bulletin of Eastern Caribbean Affairs* 12:24-32.

_____. 1986c. Housing upgrading in Barbados, West Indies: The tenantries programme. *Geography* 71:255-257.

_____. 1987. Housing in Barbados: Good, bad or beautiful?" *The New Bajan* 1:26-34.

_____. 1988. The structure and provision of housing in Barbados: A research agenda. *Bulletin of Eastern Caribbean Affairs* 14:13-45.

_____. 1989a. Rural-Urban interaction in Barbados and the Southern Caribbean: Patterns and processes of dependent development in small countries. In *The geography of urban-rural interaction in developing countries*. Ed. by R. B. Potter and T. Unwin, 257-293. New York: Routledge.

_____. 1989b. Urban housing in Barbados, West Indies: Vernacular architecture, land tenure and self-help. *Geographical Journal* 155:25-35.

_____. 1989c. Urban-Rural interaction, spatial polarisation and development planning. In *The geography of urban-rural interaction in developing countries*. Ed. by R. B. Potter and T. Unwin, 323-333. New York: Routledge.

_____ . (ed.) 1989d. *Urbanization, planning & development in the Caribbean*. New York: Mansell.

_____. 1989e. Barbados. In *The geography of urban-rural interaction in developing countries*. Ed. by R. B. Potter and T. Unwin, 114-139. New York: Routledge.**[end p. 87]**

_____. 1989f. Urbanization, planning and development in the Caribbean: An introduction. In *The geography of urban-rural interaction in developing countries*. Ed. by R. B. Potter and T. Unwin, 1-20. New York: Routledge.

Potter, R. B. and J. A. Binns. 1988. Power, politics and society. In *The Geography of the Third World: Progress and Prospects*. Ed. by M. Pacione, 271-310. New York: Routledge.

Potter, R. B. and M. L. Hunte. 1979. Recent development in planning the settlement hierarchy of Barbados: Implications concerning the debate on urban primacy. *Geoforum* 10:355-362.

Potter, R. B. and T. Unwin eds. 1989. *The geography of urban-rural interaction in developing countries*. New York: Routledge.

Price, M. D. 1987. The persistent neglect of Belize City. *Focus* 37:10-14.

Robinson, G. M. and P. A. Furley. 1983. An independent Belize. *Geography* 68:43-46.

_____. 1989. Belize. In *The geography of urban-rural interaction in developing countries*. Ed. by R. B. Potter and T. Unwin, 212-236. New York: Routledge.

Roca, S. 1986. State enterprises in Cuba under the new system of planning and management (SDPE). *Cuban Studies* 16:153-179.

Rogers, A. and J. G. Williamson. 1982. Migration, urbanization, and third world development: An overview. *Economic Development and Cultural Change* 30:463-482.

Rojas, E. and R. A. Meganck. 1987. Land distribution and land development in the Eastern Caribbean. *Land Use Policy* 4:157-167.

Rondinelli, D. A. 1982. Intermediate cities in developing countries: A comparative analysis of their demographic, social and economic character istics. *Third World Planning Review* 4:57-386.

_____. 1983a. Dynamics of growth of secondary cities in developing countries. *Geographical Review* 73:42-57.

_____. 1983b. *Secondary cities in developing countries: Policies for diffusing urbanization*. London: Sage Publications.

Rosenblum, M. 1986. *Mission to civilize: The French way*. New York: Harcourt Brace Jovanovich.

Rostow, W. W. 1978. *The World Economy*. New York: Macmillan.

Safa, H. 1974. *The urban poor of Puerto Rico*. New York: Holt, Rinehart and Winston.

Samson, Mike L. 1989. The Netherlands Antilles. In *The geography of urban-rural interaction in developing countries*. Ed. by R. B. Potter and T. Unwin, 161-180. New York: Routledge.

Santos, M. 1979. *The shared space: The two circuits of the urban economy in underdeveloped countries*. London: Methuen.

Scherm, G. 1987. The Guyanan countries. *Applied Geography and Development* 29:27-43.

Schroeder, S. 1982. *Cuba: A handbook of historical statistics*. Boston, MA: G. K. Hall & Co.

Sealey, N. E. 1982. *Tourism in the Caribbean*. London: Hodder and Stoughton.

_____. 1988. *Human geography of the Bahamas*. Unpublished manuscript, Nassau, Bahamas.

Segal, A. L. ed. 1975a. *Population policies in the Caribbean*. Lexington, MA: D. C. Heath and Company.

_____. 1975b. Bahamas. In *Population policies in the Caribbean*. Ed. by A. L. Segal, 103-125. Lexington, MA: D. C. Heath and Company.

Simpson, J. M. 1973. *A demographic analysis of internal migration in Trinidad and Tobago*. Mona, Jamaica: University of the West Indies, Institute of Social and Economic Research.

Sjoberg, G. 1960. *The preindustrial city: Past and present*. New York: Free Press.

Skinner, R. J. and M. J. Rodell. 1983. *People, poverty and shelter: Problems of self-help housing in the third world*. London: Methuen.

Sleeman, M. 1986. Sugar in Barbados and Martinique: A socio-economic comparison. In *Dual legacies in the contemporary Caribbean: Continuing aspects of British and French dominion*. Ed. by P. Sutton, 126-152. London: Frank Cass and Co.

Soler, F. 1987a. *Development control and physical planning: The case of the Commonwealth of Dominica*. Roseau, Dominica: Organization of American States, Department of Regional Development, Organization of Eastern Caribbean States Natural Resources Management Project, Economic Base Resource Management Plurinational Project.

_____. 1987b. *Development control and physical planning: The case of St. Kitts and Nevis*. Bassterre, St. Kitts: Organization of American States, Department of Regional Development, Organization of Eastern Caribbean States Natural Resources Management Project, Economic Base Resource Management Plurinational Project.

_____. 1987c. *Development control and physical planning: The case of Antigua and Barbuda*. St. John's, Antigua: Organization of American States, Organization of American States, Department of Regional Development, Organization of Eastern Caribbean States Natural Resources Management Project, Economic Base Resource Management Plurinational Project.

Spinner, T. J. 1982. Guyana update: Political, economic, moral bankruptcy. *Caribbean Review* 11:8-11, 30-32.

St. Cyr, E. B. A. 1981. *Industrial development strategies in Caribbean countries: Trinidad and Tobago*. Port of Spain, Trinidad: Economic Commission for Latin America and the Caribbean, Office of the Caribbean.

St. Vincent. Central Planning Division. 1986. *St. Vincent and the Grenadines development plan 1986-1988*. Kingstown, St. Vincent: Ministry of Finance and Planning.

Standing, G. and F. Sukdeo. 1977. Labour migration and development in Guyana. *International Labour Review* 116:303-313.

Stevens, P. H. M. 1957. Planning in the West Indies. *Town and Country Planning* 25:503-508.

Stohr, W. B. 1981. Development from below: The bottom-up and periphery-inward development paradigm. In *Development from above or below*. Ed. by W. B. Stohr and D. R. F. Fraser, 39-72. New York: John Wiley.

Strachan, A. J. 1980. Government sponsored return migration to Guyana. *Area* 12:165-169.

Strachan, A. J. 1981. Housing patterns and values in a medium sized third world city: Georgetown, Guyana. *Tijdschrift voor Economische en Social Geografie* 72:40-46.

_____. 1983. Return migration to Guyana. *Social and Economic Studies* 32:121-142.

_____. 1989. Guyana. In *The geography of urban-rural in-teraction in developing countries*. Ed. by R. B. Potter and T. Unwin, 140-160. New York: Routledge.**[end p. 88]**

Susman, P. 1987a. Spatial equality and socialist transformation in Cuba. In *The socialist third world: Urban development and territorial planning*. Ed. by D. Forbes and N. Thrift, 250-281. Oxford: Blackwell.

_____. 1987b. Spatial Equality in Cuba. *International Journal of Urban and Regional Research* 11:218-241.

Todaro, M. P. 1977. *Economics for a developing world*. London: Longman.

_____. 1980a. Internal migration, urban population growth and unemployment in developing nations: Issues and controversies. *Journal of Economic Development* 5:7-23.

_____. 1980b. Urbanization in developing nations: Trends, prospects, and policies. *Journal of Geography* 79:164-174.

._____ 1981. *City bias and rural neglect: The dilemma of urban development*. New York: The Population Council.

Turner, J. F. C. 1982. Issues in self-help and self-managed housing. In *Self-Help housing: A critique*. Ed. by P. M. Ward, 99-113. London: Mansell.

_____. 1983. From central provision to local enablement: New direction for housing policies. *Habitat International* 7: 207-210.

Ulack, R. 1978. The role of urban squatter settlements. *Annals of the Association of American Geographers* 68:535-550.

United Nations Development Programme. 1985. *Commonwealth of Dominica national structure plan 1985*. Prepared by the Economic Development Unit with the Assistance of UNDP/UNCHS. Project DMI/81/003.

Vance, J. E. 1970. *The merchant's world: The geography of wholesaling*. Englewood Cliffs, NJ: Prentice-Hall.

Vendovato, C. 1986. *Politics, foreign trade and economic devel-opment: A study of the Dominican Republic*. London: Croom Helm.

Ward, P. M. 1982. *Self-Help housing: A critique*. London: Mansell.

Weisskoff, R. 1985. *Factories and foodstamps: The Puerto Rican model of development*. Baltimore, MD: Johns Hopkins

University Press.

West, R. C. and J. P. Augelli eds. 1989. *Middle America: Its lands and peoples*. Englewood Cliffs, NJ: Prentice-Hall.

White, G. 1987. Cuban planning in the mid-1980s: Centralization, decentralization, and participation. *World Development* 15:153-161.

Whittier, S. 1987. *Bahamas*; Insight guides services. Singapore: APA Productions, Ltd.

Worrell, D. 1987. *Small island economies: Structure and performance in the English-speaking Caribbean since 1970*. New York: Praeger Press.

Yap, L. Y. L. 1977. The attraction of cities: A review of the migration literature. *Journal of Development Economics*. 4:239-264.

Zelinsky, W. 1971. The hypothesis of the mobility transition. *Geographical Review*. 61:219-249.**[end p. 89]**