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## **The Dynamics of Human Settlement and Migration<sup>1</sup>**

A major theme of geographic research in Latin America over the years has been to outline the changing structure of human settlement patterns. Understanding the underlying forces and processes of how those settlement systems evolve has been a more elusive secondary goal. As change has accelerated in the modern world and affected virtually all regions of Latin America, the need to understand the forces causing those changes has also accelerated. Change has been so rapid in the decade of the 1970s that data collected on settlement structures in the recent past can not even be assumed to be representative of Latin America in the 1980s. But these prior studies of settlement do reflect stages of development at particular points in time and thus are vital in building an historical settlement record. Examining cycles of how different countries and regions pass through the developmental process at different times show how these developmental processes change as underlying conditions and forces evolve and are restructured. These macro-level models of spatial, temporal, and hierarchical systems provide a context to understand micro-level processes.

It is also important to recognize that there are historical and developmental cycles at the micro-level. Not only do decision-making processes shift as conditions, priorities, and underlying forces change, but they vary greatly by age, sex, subgroup affiliation, and many other factors. Micro-level studies help to define the basic perceptual/behavioral subgroups and the structural factors that affect settlement and migration decisions. The dynamics of settlement change and migration involve examining many processes at both the macro and micro-levels and how they evolve over time. Based on data at both the macro- and micro-levels, models integrating both levels can be developed on the causes and effects of human settlement and land use change (Wilkie, 1974, 1-31).

To give focus to these research and analytical goals, some of the research undertaken by this author over the last decade is presented. First, the paper presents a discussion of the various urban-rural levels in the settlement hierarchies of Latin America and develops a typology for classifying them. The framework that is presented must be considered exploratory and does not argue against different views of these same phenomena from other methodological and

theoretical viewpoints. Second, data are presented using this classification system on the twenty major republics of Latin America for three time periods: 1950, 1960, and 1970. An in-depth examination of Mexico since 1910 shows how the classification system yields insights into the historical evolution of settlement systems and hierarchies. Finally, data are presented on the perception and behavior of rural migrant who locate in and move through the various levels of the Argentine settlement hierarchy. While the Argentine data do not necessarily reflect perceptions and behavior patterns for all of Latin America, they are representative of a migrant population from the more urban dominated settlement systems, especially those in southern South America.

Three assumptions underlie these analyses:

1) In general, settlement landscapes and hierarchies evolve over time from natural landscapes that are untouched or lightly settled to more densely settled highly urban settlement systems (There are many exceptions in regions that have depopulated, but none have occurred in significant numbers in Latin American countries in the past 30 years). These systems evolve at different times in different places, but many ultimately pass through stages that have occurred elsewhere under similar circumstances in the past. It is assumed that a classification of these settlement systems can be developed and national units can be traced over time, thus providing a way of predicting and influencing how countries develop their future settlement hierarchies. This does not mean that all settlement hierarchies will reach the most densely settled classification level or that all settlement hierarchies go through only one transformation process. Rather, a number of different processes of settlement evolution take place and they in time change as national conditions and personal needs shift. Understanding each of the settlement type hierarchies and how their patterns emerge and change will help to more accurately meet the needs of people living in all sizes of communities and landscape densities, as well as under a variety of environmental and land-system situations.

2) Changes in human settlements are controlled by both macro- and micro-level forces in the society. National and regional macro-level forces and decisions have created an infrastructure of systems that hinders, limits, or encourages certain decisions made at the individual level as to career selection, where to live, what lifestyle to maintain, where to travel, environmental use priorities and values, as well as many other factors. On the other hand, micro-level decisions made by individuals about these life organizing decisions in turn help to evolve and change

the macro-level systems in which they operate. In all countries of Latin America both forces operate to structure settlement hierarchies, but in some the direction from above is more powerful while in others it is not as influential. Both types of processes need to be understood in order to understand settlement evolution.

3) Understanding the migration process is an integral part of understanding human settlement processes. Migration, along with fertility and mortality, is a dynamic force that is constantly evolving the settlement structure and the hierarchy of cities in which people live. There is a clear need for understanding the migrants' decision-making processes with regard to where in the environment they are going to live and how they are going to organize and use their space and environment. We need to answer these questions if we want to solve such problems as environmental degradation, population-resource imbalance, and primate city growth and dominance. Without knowing more about decisions made at the perceptual and behavioral levels it will be an impossible task to educate people about environmental options and consequences.

### **A Classification of Settlement Hierarchies**

Traditionally, an urban versus rural classification has been used to show relative urbanization. This classification, however, does not provide a picture of the sizes of communities and types of settlement hierarchies that exist, nor does it indicate the stages of settlement change that regions or nations go through. The following typology, which isolates five levels in the rural-urban continuum, has been developed to better examine the urbanization process (see Wilkie, 1976; 1980b; and 1980c):

O-Dispersed Settlement: less than 100 inhabitants

1-Village: rural centers between 100 and 2,500 inhabitants

2-Simple Urban: centers between 2,501 and 20,000 inhabitants

3-Complex Urban: centers between 20,001 and 500,000 inhabitants

4-Metropolitan: centers over 500,000 inhabitants

In addition, a sixth category will be used for the 1980 census results:

5-Megalopolis: centers over 10 million population.

The division of this urban-rural classification corresponds to break points in common usage (e.g. 2500 or 2000 dividing urban from rural populations and 500,000 for beginning the metropolitan category) and to even incremental breaks between the five categories taken from a straight line drawn on a semilogarithmic

graph (see Wilke, 1976, 106). Both approaches for determining the upper and lower limits of each of these five categories produce nearly identical results:

0) Dispersed Settlement: The division between dispersed and village populations falls between 100 and 167 individuals and closely approximates the figure currently in use in most Latin American countries. Mexico, for example, has census categories of under 100 and 100 to 500 for small villages, while Argentina stops listing village populations between 100 and 200 in size.

1) Village: The common break point between rural villages and an urban classification falls in the range of 2000 and 2500 inhabitants. According to Doherty and Ball (1971: 20-28), 2500 inhabitants in Mexico appears to be a quite accurate threshold for the maintenance of many basic services. With the exceptions of a primary school and a physician (with population thresholds of 960 and 2133), the crucial size to support most basic services were as follows: health center (2498), pharmacy (2512), gasoline station (2596), secondary school (2696), cinema (2860), auto repair shop (2912), and restaurant (2933). While the authors recognized that these figures from a sample of 30 villages around Mexico can only be approximate, they feel that "the thresholds generally do reflect the high population requirements for the appearance of urban function and reveal the order of occurrence of functions." Argentina, with a somewhat more mobile rural population, uses the figure of 2000 population as the break between rural villages and the urban classification.

2) Simple Urban: The division between simple and complex urban centers at 20,000 inhabitants is compatible with international units of measurement. Ducoff (1965, 199) and Elizaga (1965, 145) feel that a population of 20,000 inhabitants clearly marks the beginning of a more complex urban category in the Latin American context. This figure is also used by the United Nations (1969, 19) for international comparative purposes, as well as by other scholars (Ginsburg 1961, 34).

3) Complex Urban: The figure of 500,000 is often used by census volumes as a tabular break, but it is also about the size at which a city moves out of a complex urban level to become a true metropolitan center. Complex urban cities are clearly distinguished from simple urban centers, but usually serve as regional rather than national centers.

4) Metropolitan: Between half a million and about 10 million inhabitants

designates those cities that often dominate an entire country or at least a very large 'region within a nation. The lower figure seems to be the minimum requirement to truly maintain the metropolitan atmosphere of cities in the category which are for the most part at least several million in size.

5) Megalopolis: (Not used in this study). At about 10 million population, metropolitan centers begin to move into a new category that Gottman (1961) notes is "more the size of a nation than that of a metropolis." Megalopolis units so completely dominate the landscape that most centers in the hierarchy begin to merge into one huge urban agglomeration. In 1980, Latin America has at least four megalopolis regions approaching or surpassing that population threshold – Mexico City with 15 million, Sao Paulo with 13.5 million, Rio de Janeiro with 10.7 million, and Buenos Aires with 10.1 million (United Nations, 1980). Thus all four currently surpass 14 of the 20 largest countries in Latin America, and only one country (Colombia) not associated with those cities has a larger national population than the Mexico City and Sao Paulo/Rio de Janeiro megalopolis regions.

This more complex classification, by identifying the sizes of communities in which various proportions of the population live, permits a more detailed analysis of the changing spatial settlement hierarchy of a nation over time.

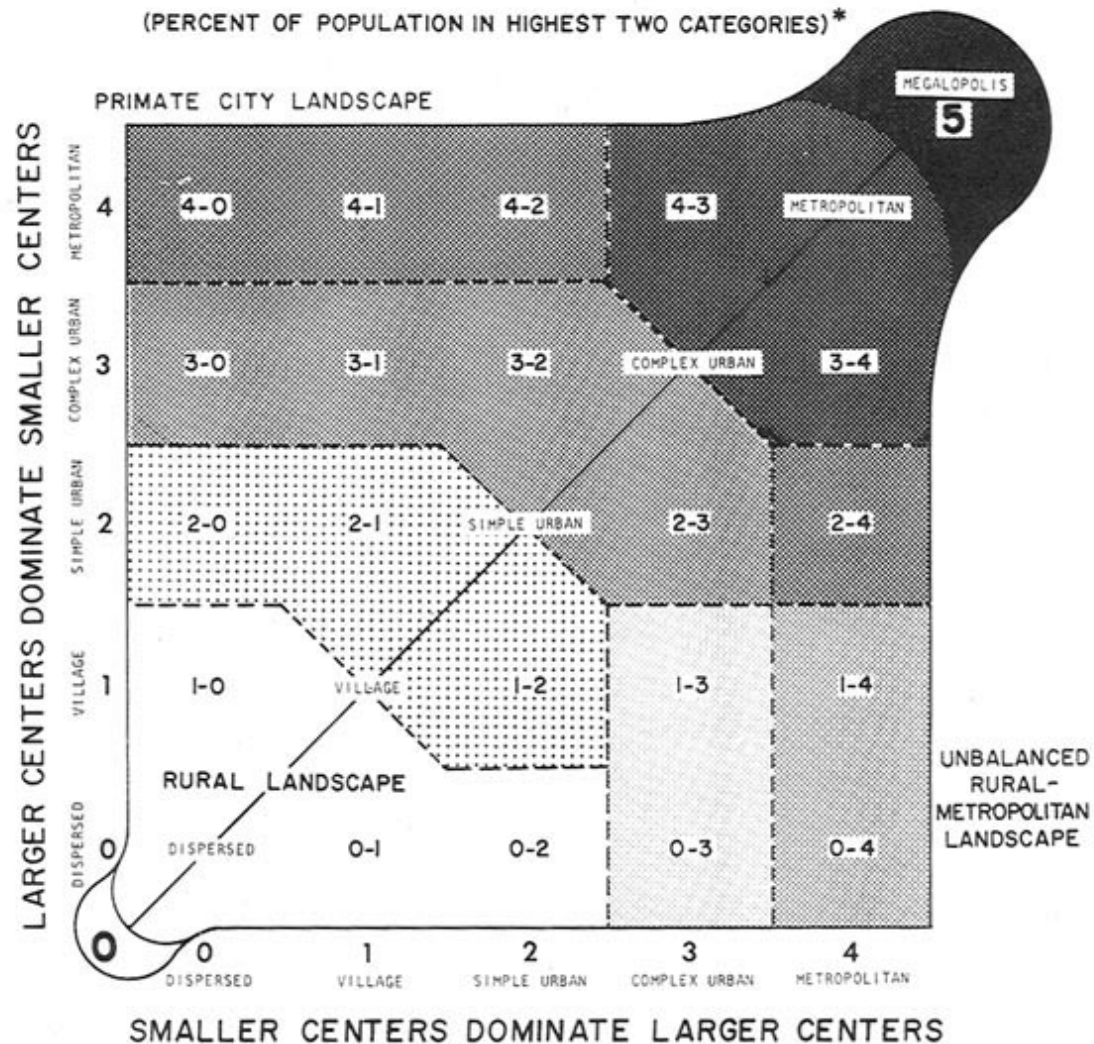
## **A Typology for Classifying Settlement Hierarchies**

While in most countries population resides at each of the five community size levels, in virtually every case a substantial majority of the population (over three-fifths) lives in only two of the five levels. The two levels with the high percentage of population are used to classify countries and subregions on the settlement typology presented in Figure 1. For example, Colombia in 1964 would be classified as dispersed-complex urban (0-3). The dispersed level with 40.5 percent of the Colombian population was the highest ranking category followed by the complex urban level with 19.2 percent of the population. Together these two settlement levels accounted for three-fifths of the Colombian population in 1964. Of the remaining population, 17 percent resided in metropolitan centers, 15 percent in simple urban communities, and 8 percent in villages.

FIGURE 1

## A MATRIX TYPOLOGY OF URBAN-RURAL HIERARCHIES

(PERCENT OF POPULATION IN HIGHEST TWO CATEGORIES)\*



\*The two urban-rural levels with the largest percentages usually have between 55 and 80 percent of the total population of the region.

	CODE	SETTLEMENT TYPE	POPULATION SIZE
RURAL	0	= Dispersed Settlement	under 200 <sup>a</sup>
	1	= Village	200 to 2,000 <sup>b</sup>
URBAN	2	= Simple Urban	2,001 to 20,000 <sup>c</sup>
	3	= Complex Urban	20,001 to 500,000
	4	= Metropolitan	over 500,000
	5	= Megalopolis	over 10 million

<sup>a</sup>varies between countries (range 50 to 250 upper limit)

<sup>b</sup>varies between countries (range 1500 to 2500)

<sup>c</sup>varies between countries (range 20,000 to 35,000)

Data for the settlement hierarchies of all 20 Latin American countries are presented on Table 1 for 1950, 1960, and 1970. These data provide an initial examination of the structure of the settlement hierarchy for Latin America

(Wilkie, forthcoming). The resulting settlement classifications are then mapped in Figure 2 and countries are grouped by classification level over time in Figure 3. While it is not possible to go into an in-depth analysis of the transformation of the Latin American settlement research in this paper, a case study of Mexico for the period 1910 to 1970 is used to illustrate the kind of settlement analysis that is possible. In addition, five examples serve to show the extreme range of settlement hierarchy types existing in Latin America:

TABLE 1

Latin America 1950, 1960, 1970:

Percent of Population in Each Urban-Rural Level

Countries in geographical groupings, north to south	Census Year	0 Dispersed population 1 to 99	1 Village 100 to 2,500	2 Simple Urban 2,501-20,000	3 Complex Urban 20,001-500,000	4 Metro- Politan over 500,000	Settlement Hierarchy Classi- fication	Percent in top 2 levels
Mexico	1950	6.9	50.5	18.6	13.9	10.1	1-2	69.1
	1960	4.5	44.8	17.7	15.8	17.2	1-2	62.5
	1970	3.0	38.4	18.5	20.9	19.2	1-3	59.3
Guatemala	1950	— 74.6 —	—	13.8	11.5	—	0-1	74.6
	1964	— 66.0 —	—	18.4	2.2	13.4	0-2	66 to 70
	1973	— 66.0 —	—	18.0	2.5	13.4	0-2	66 to 70
El Salvador	1950	— 72.2 —	—	14.8	13.0	—	0-1	72.2
	1961	— 59.4 —	—	21.3	19.3	—	0-2	61 to 65
	1971	— 61.0 —	—	17.3	6.9	15.0	0-2	61 to 65
Honduras	1950	— 81.1 —	—	11.2	6.8	—	0-2	80 to 86
	1961	70.1	6.8	10.5	12.6	—	0-3	82.7
	1974	— 74.0 —	—	5.8	20.2	—	0-3	80 to 88
Nicaragua	1950	— 65.1 —	—	19.7	15.2	—	0-2	68 to 75
	1963	— 59.0 —	—	18.0	23.0	—	0-3	68 to 75
	1971	— 52.0 —	—	17.0	31.0	—	0-3	65 to 75
Costa Rica	1950	— 66.5 —	—	15.8	17.7	—	0-3	67 to 72
	1963	— 65.5 —	—	15.9	18.6	—	0-3	67 to 72
	1973	— 59.4 —	—	13.6	27.0	—	0-3	68 to 75
Panama	1950	26.5	37.5	13.5	22.4	—	1-0	64.1
	1960	23.8	34.7	8.4	33.1	—	1-3	67.8
	1970	— 52.0 —	—	8.6	39.4	—	3-1	66 to 70
Cuba	1953	43.6	6.0	14.4	17.2	18.8	0-4	62.4
	1964	— 48.0 —	—	14.1	16.4	21.4	0-4	62 to 64
	1970	— 47.0 —	—	9.9	15.6	27.5	0-4	65 to 70
Haiti	1950	— 88.0 —	—	4.2	7.8	—	0-1	88.0
	1960 (estim.)	— 85.0 —	—	7.6	7.4	—	0-1	85.0
	1971	— 81.0 —	—	6.3	12.7	—	0-1	81.0
Dominican Republic	1950	— 76.0 —	—	10.1	13.9	—	0-1	76.0
	1960	— 70.0 —	—	7.8	22.2	—	0-3	72 to 80
	1970	— 60.0 —	—	9.8	13.4	16.8	0-4	62 to 70
Venezuela	1950	39.5	11.9	15.3	17.6	15.7	0-3	57.1
	1961	— 37.0 —	—	16.0	27.2	19.8	3-0	55 to 60
	1971	— 25.0 —	—	15.9	33.0	26.4	3-4	59.4
Colombia	1951	— 64.0 —	—	13.0	16.8	6.2	0-3	65 to 70
	1964	40.5	7.9	15.0	19.2	17.3	0-3	59.7
	1973	— 36.4 —	—	11.8	24.5	27.3	0-4	56 to 58
Ecuador	1950	— 72.0 —	—	10.2	17.8	—	0-3	73 to 80
	1961	— 64.0 —	—	8.7	16.2	11.1	0-3	65 to 75
	1974	— 62.0 —	—	5.4	9.8	22.4	0-4	63 to 73
Peru	1950 (estim.)	— 59.0 —	—	18.9	6.8	15.3	0-2	60 to 68
	1961	— 53.0 —	—	16.0	12.4	18.6	0-4	58 to 64
	1970	— 40.0 —	—	19.6	14.9	25.5	0-4	54 to 60
Bolivia	1950	— 74.0 —	—	8.7	17.3	—	0-1	74.0
	1960 (estim.)	— 73.0 —	—	4.1	22.9	—	0-3	74 to 84
	1976	— 71.0 —	—	2.7	12.4	13.9	0-4	72 to 78
Brazil	1950	59.5	5.3	10.6	12.6	11.9	0-3	72.1
	1960	50.3	4.6	12.4	14.2	18.5	0-4	68.8
	1970	44.0	3.8	16.0	11.3	24.9	0-4	68.9
Paraguay	1950	— 65.0 —	—	19.4	15.6	—	0-2	68 to 75
	1962	— 64.0 —	—	19.2	16.8	—	0-2	68 to 75
	1972	— 22.0 —	—	23.4	30.3	24.3	3-4	54.6

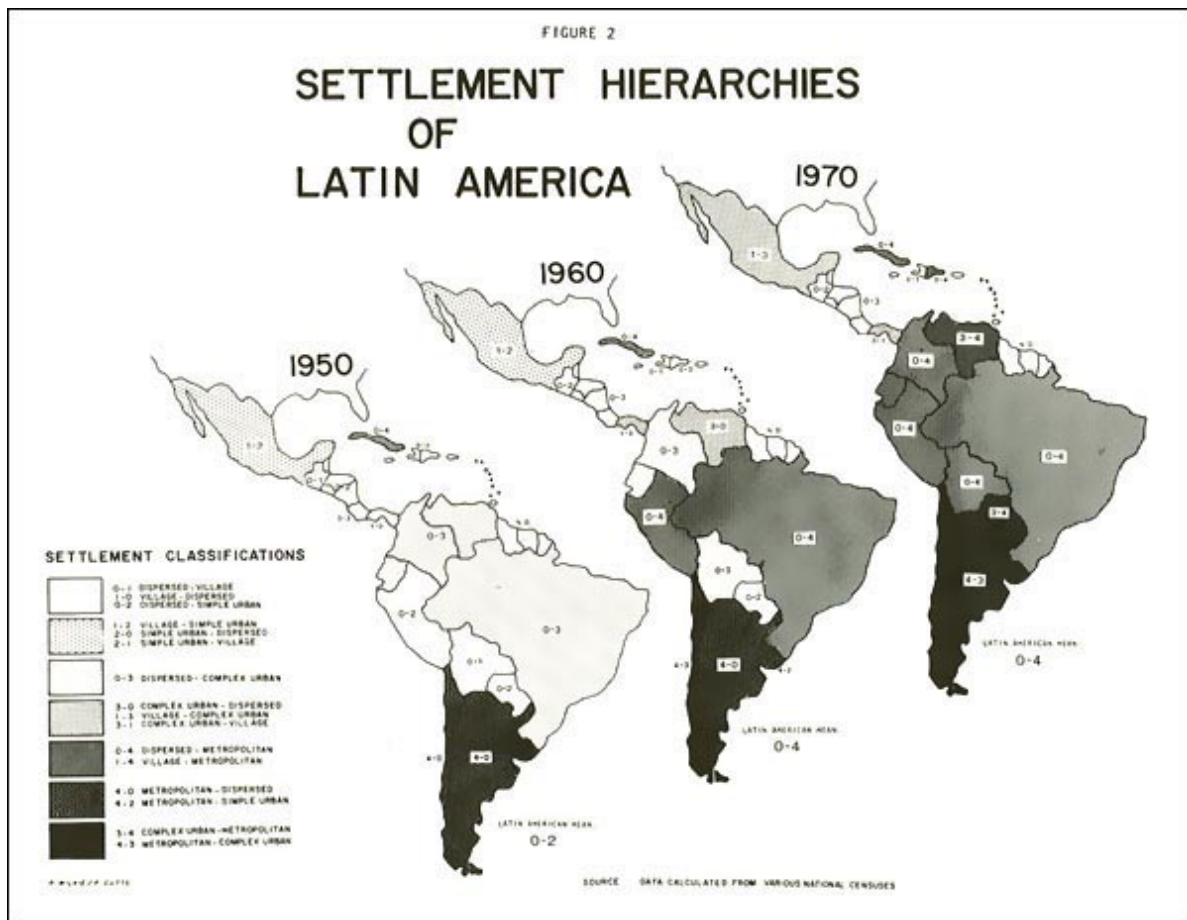


1) The Dispersed Rural Type: Haiti (0-1) throughout the period, but especially in 1950, was overwhelmingly a dispersed settlement pattern with small villages. Nearly nine out of ten Haitians (88 percent) lived in either of these two most rural settlement levels, thus classifying as 0-1.

2) The Village-Simple Urban Type: Mexico (1-2) for most of the twentieth century had more than half its population living in villages between 100 and 2500 in population and about a fifth of its population in lower order urban centers under 20,000 in size. In 1950, for example, seven out of ten Mexicans lived in these two lower order urban types of communities.

3) The Imbalanced Type: Argentina (0-4) has traditionally been split between a large dispersed population and a large metropolitan population, with few intermediate-sized communities available to citizens. In 1947, for example, nearly a third of the population lived in metropolitan Buenos Aires, while nearly another third lived totally dispersed in isolated clusters of under 100 individuals. Together these two extremely contrasting settlement levels accounted for two-thirds of the Argentine population.

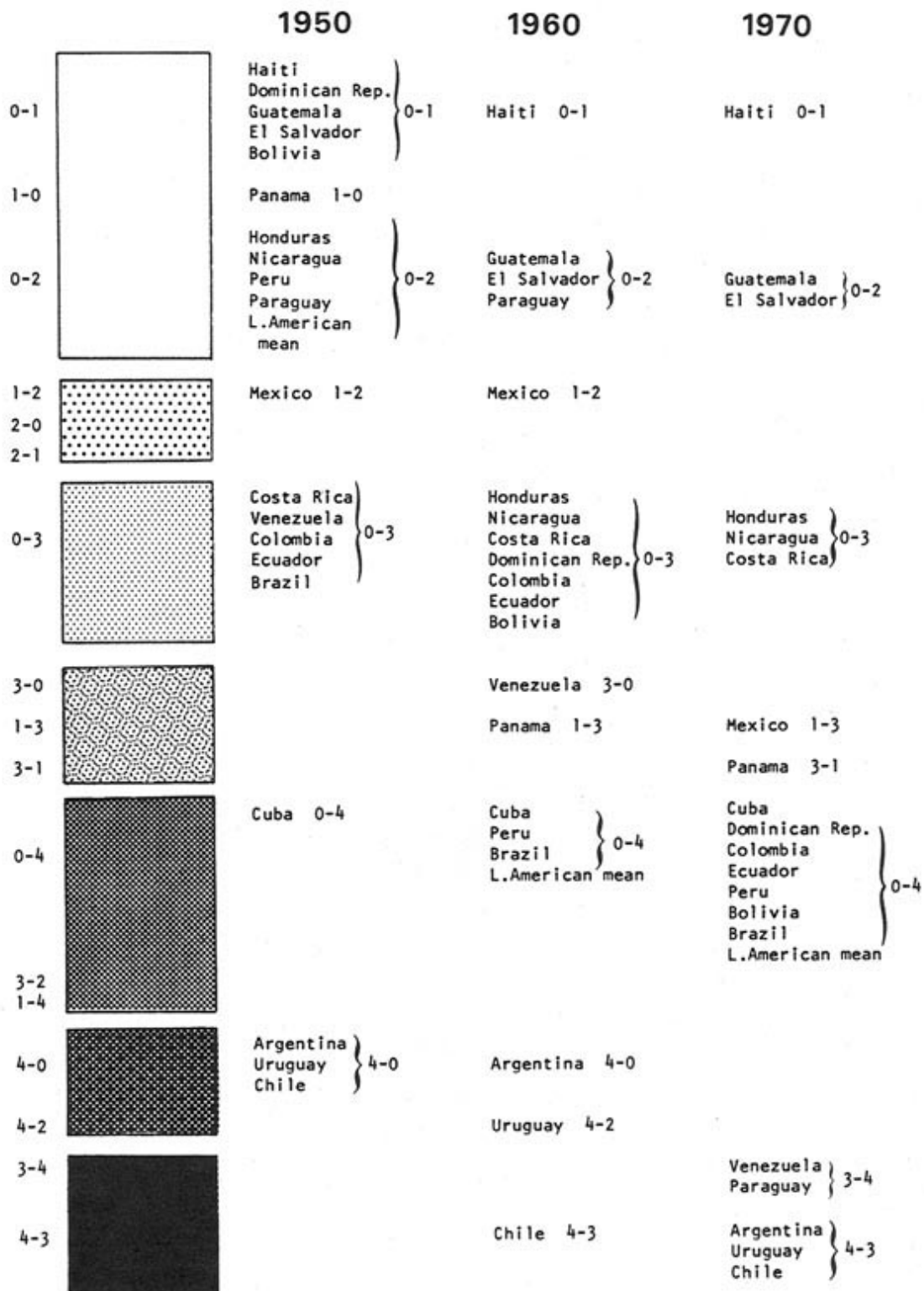
4) The Primate Urban Type: Uruguay (4-3) is the classic case of the primate city dominance of a nation. By 1970, half the citizens of the country lived in metropolitan Montevideo and another fifth lived in complex urban centers. Thus, seven out of ten Uruguayans lived in urban centers of over 20,000 population.



5) The Balanced Type: Chile (4-3-0-2-1) in 1960 was one of the few countries in Latin America to have a relative balance among the five urban-rural levels. At that time, Chile had a quarter of the population in each of three levels-metropolitan, complex urban, and dispersed, and a quarter of the population was divided between the simple urban and village levels.

FIGURE 3

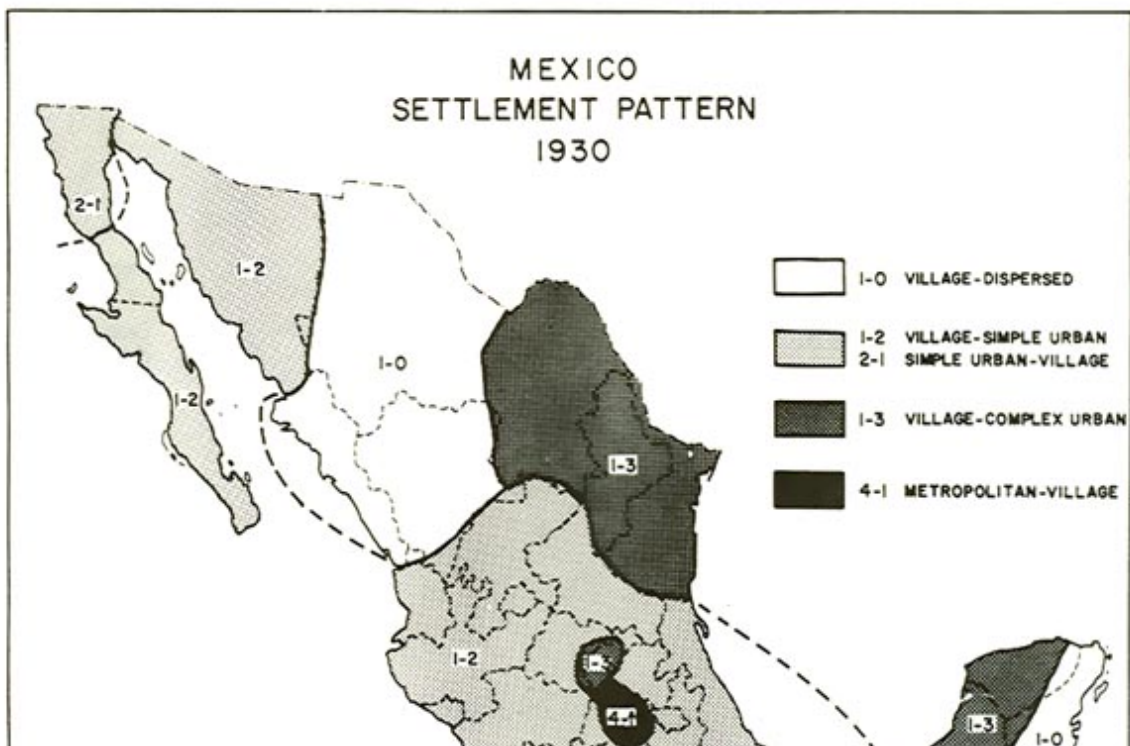
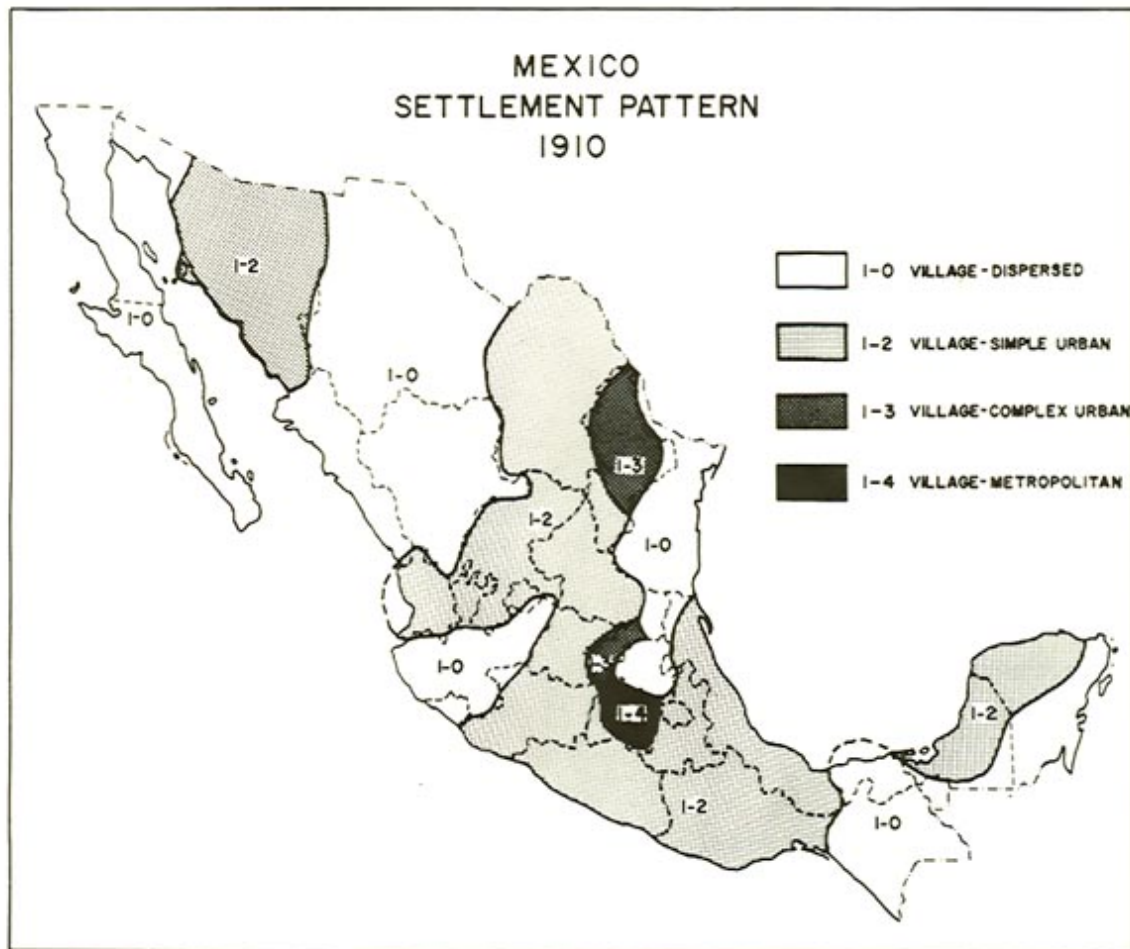
SETTLEMENT CLASSIFICATION BY COUNTRY: 1950's, 1960's and 1970's



The Mexican Example: 1910 to 1970

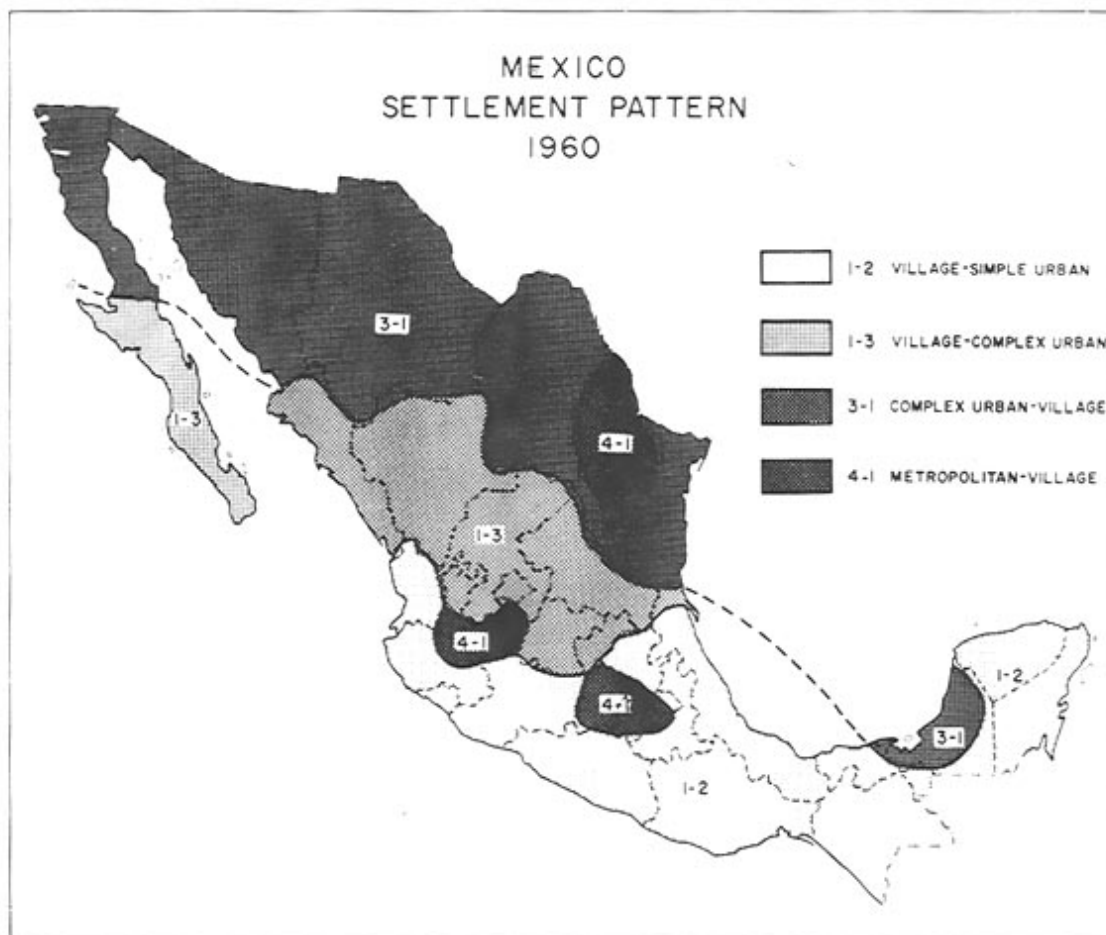
Data on the settlement hierarchy of Mexico from 1910 to 1970 provide an example to view an urbanization process over time. the settlement hierarchy of Mexico was consistently at the village-simple urban level (1-2) from 1910 to 1970 when it finally reached village-complex urban (1-3). In spite of that overall stability, rather significant regional patterns began to evolve beginning around 1930. Figures 4 and 5 show four time periods and the consolidation of regional patterns over time. Without going into greater detail here (Wilkie, 1976, 99-134), several observations can be made:

FIGURE 4



1) Mexico in 1910 was overwhelmingly rural in character. Three out of five Mexicans lived in rural villages between 100 and 2500 inhabitants, and the village level was the predominant category in every Mexican state and region including the area around Mexico City. In the states where the revolution began, rural villages and dispersed population accounted for between two-thirds and four-fifths of the population of those areas. The settlement patterns over larger regions were still broken into pockets of village-dispersed (1-0) or village-simple urban (1-2) rather than being uniform.

FIGURE 5



2) By 1930, Mexico's 11 distinct pockets of village-dispersed and village-simple urban areas had evolved into six more homogeneous regions. Nearly all of the central two-thirds of Mexico, with the exception of the Mexico City area and Queretaro, had become a village-simple urban (1-2) settlement hierarchy. The north of Mexico and the Yucatan were still varied and ranged from a growing metropolitan category around Monterrey to very rural dispersed village zones.

3) Mexico in 1960 still maintained a village-simple urban (1-2) hierarchy, but considerable growth had taken place in the metropolitan and complex urban levels (metropolitan had gone from 6.5 percent in 1930 to 17.2 percent in 1960 and complex urban from 9.4 percent to 15.8 percent at the same time). In addition to three highly metropolitan dominated regions (4-1) around Mexico City, Guadalajara, and Monterrey, and a more urban dominated region in the north, it was still possible to identify the old Mesoamerican cultural border between northern and central Mexico, where the 1-3 hierarchy borders the 1-2 hierarchy. Virtually all of the old Mesoamerican culture region was still a village-simple urban (1-2) settlement classification.

4) Ten years is a relatively short period of time, yet between 1960 and 1970 the population of Mexico grew from nearly 35 million to over 48 million, a 38.5 percent increase. This 10 year growth nearly equaled the entire population of Mexico in 1920, some 14.3 million inhabitants. Rapid growth puts tremendous stress on the expanding urban network. But in spite of this sizeable increment, the settlement size classification changed in only 9 of the 32 political units (see Figure 5). The Mexico City hinterland, which by 1970 included the states of Mexico, Morelos, Tlaxcala, and parts of Puebla and Hidalgo, had become metropolitan-simple urban (4-2), as had most of the state of Jalisco around Guadalajara. These were the first two regions in Mexico to have the village level drop below second position. The rest of Mexico remained relatively unchanged, except growth of higher order urban centers took place earlier in the north of Mexico than in the south. Thus zone 3-1 occurred first in the north and then slowly expanded southward into the 1-3 zone, which in turn expanded southward into the 1-2 zone. The results of the 1980 census will probably show that much of Mexico's old settlement pattern of village-simple urban (1-2) will have evolved into a higher order urban hierarchy.

Population and settlement change have been tremendous since 1910 when the Mexican revolution began. Not only has the overall population grown more than



eight-fold since then, but over 26,000 new settlements had been started on the landscape between 1910 and 1970. While the basic framework of settlement location was well established by 1910, the filling in of the urban-rural hierarchy in more uniform patterns did not show up until the 1930 census. It is likely that by 1980 Mexico will have one of the most evenly balanced settlement hierarchies among the five settlement size levels of any country in Latin America.

## **Migrant Perception and Movement in the Settlement Hierarchy of Argentina**

The macro-level analysis of settlement structures introduced in this paper provides a construct for viewing the particular stages of urbanization and development for each Latin American country. However, this type of analysis does not provide the insights necessary for understanding the decision-making processes that individuals go through in selecting the kinds of places in the urban-rural hierarchy in which they want to live. Obviously these processes are extraordinarily complex and they vary by such things as sex, stage in the life cycle, social class origins, and rural versus urban origin of the individual, as well as by the stage of development of the country and urban or rural options open to migrants. It is the sum total of many decisions that leads to a changing settlement landscape and hierarchy of cities in nations and their subregions.

Since 1965 this researcher has been studying several rural villages in Argentina while attempting to uncover those processes. One village in particular, Aldea San Francisco in the province of Entre Rios, has been monitored for over 14 years. An in-depth study of all 58 families (315 individuals) was undertaken in 1965-67. Further research during the period 1973-76 restudied the village population and traced and studied the migrant population in their new environmental settings. In all, 195 individuals over the age of 41 were re-interviewed in the village in greater depth than before, while 264 migrants from the village were traced and interviewed. Further field work allowed the village and migrant data to be updated through 1977. <sup>2</sup>

This study provides a unique data set that traces a village population throughout the twentieth century as well as providing cross-sectional data on perception and behavior relating to settlement and migration decision-making at two points in time. The in-depth study in the mid-1960s was completed before the modernization process had much impact on the village, while the one in the mid-1970s recorded perceptions, attitudes, values, and behavior after modernization

had made a major impact on the villagers. Both the village and migrant studies used nearly 1,000 questions to fully document and detail every aspect of the settlement and migration processes.

Only some results regarding the selection of settlements in the urban-rural hierarchy of Argentina will be presented here (Wilkie, 1973a; 1973b; 1974; 1980a; Wilkie and Wilkie, 1980a; 1980b). Where people want to live and the reasons underlying their attitudes vary greatly. Most of the people from Aldea San Francisco have firm opinions as to the kinds of physical environments and community sizes in which they want to live, and when given a choice, will choose to live there. Others like many kinds of places and will adjust wherever they are if other factors such as social relationships and economic opportunities are working out positively for them. Still others do not care where they live. The physical environment is something they either accept unquestioningly, mistrust, or in some cases actually fear. Thus, villagers select environments that range over the entire urban-rural continuum from untouched natural to extremely urban human-built environments.

### *Factors In the Decision to Change Settlements*

Migration into and out of Aldea San Francisco has occurred steadily during this century. Out-migration far exceeded in-migration and return migration, as there was no way the village land could support the high natural population increase resulting from the 10 to 12 children typical of first generation families. The highest out-migration occurred between 1950 and 1977, peaking in the late 1950s and again in the 1970s. Since 1950 an average of between 10 and 18 migrants left the village annually. In-migration occurred consistently since the 1920s but in much smaller numbers. Most in-migrants are females who marry men from Aldea San Francisco, with the largest number coming since 1970. Return migration peaked between 1935 and 1949 following the world depression and World War II. In all, 598 permanent out-migrants are known to have left the village since its founding (nearly three times its present population), with 408 of the migrants leaving between 1935 and 1977. Of that total about 70 percent, or 264 migrants were located and interviewed in depth. The other 30 percent included those who had passed away, could no longer be located, or would not agree to be interviewed (9 percent).

Motivations for leaving Aldea San Francisco were examined by asking each migrant to score 49 standard reasons for migrating on a five point scale ranging

from a high of "very much of a reason" to a low of "no reason at all" for leaving the village. After scoring each of the 49 items, the migrant added any number of additional reasons he or she felt were important, and they were scaled. Once the list was completed, the interviewer read the items with the highest scores back to the respondent. Each migrant then determined which item from those with the highest scores ranked first in importance, which was second, and which scored third.

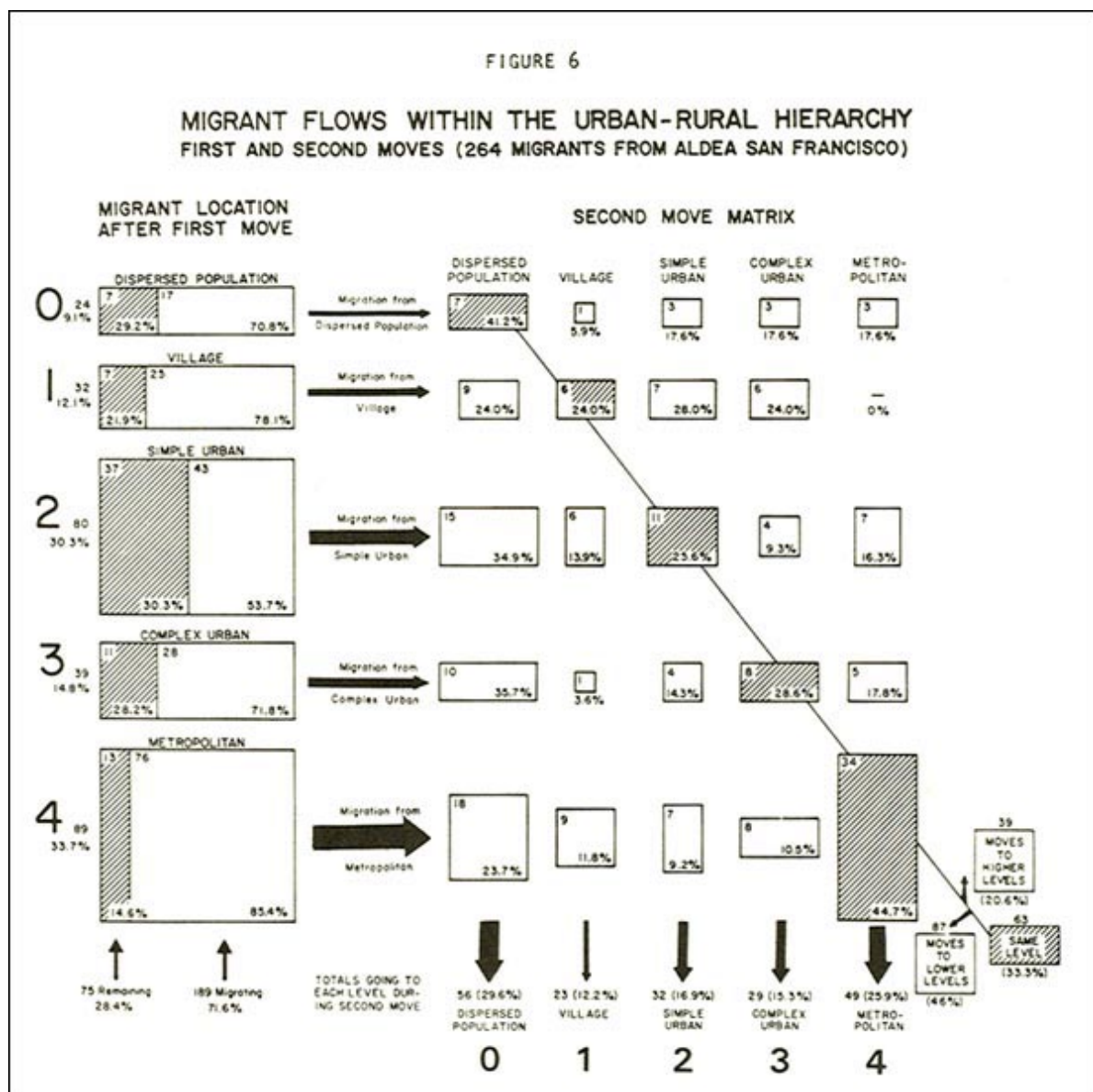
Pull forces from the outside outnumbered push factors from the village, accounting for three-fourths of the top items named. Overall, it was usually a combination of several key factors that led to the decision to leave. While there are always economic consequences of moves and many migrants can most easily sum up a complex move by stating "it was to get a better job," three-fifths of the first reasons and two-thirds of all reasons for leaving the village were non-economic. While the largest village subgroup thinks and acts primarily in economic terms, there are sizeable migrant groups for whom family and friends, environment and location, personal growth and satisfaction, or education are principal reasons for leaving. Following economic (with 39.5 percent of first responses and 35 percent of all responses) in order of importance are eight other factors: social with 27.2 percent of first reasons for leaving the village and 17.7 percent of all reasons, environment and spatial -- 11.2 percent and 18.2 percent, cultural -- 10.2 and 8.8 percent, psychological -- 7.3 percent and 13.4 percent and other reasons (health and diet, religious, political, and traditional) -- 4.5 percent and 6.9 percent. Clearly various migrant groups seek a range of conditions when they move. A balanced urban-rural hierarchy provides a greater range of options to meet these various needs (Wilkie, 1980a, 157-184).

### *The Move Sequence of Migrants in the Settlement Hierarchy*

The move sequence of migrants, the motivation for each move, and how migrants move through the five settlement levels all give insights into the evolution of settlement change. An analysis of the moves that were considered most successful by the migrants reveals that the first move in the migration sequence was the move with the most mixed responses. For over a fourth of the migrants (28.4 percent) it was the only move, and for two-thirds of them it was considered a "very satisfactory" move. But for nearly three-fourths of the migrants, the first move was only the first of several. In this group almost one-half (46 percent) said the first move was the "worst move" of all the moves they made. This high rate of dissatisfaction with the first move is probably not unusual in that nearly half of

the migrants did not plan the move, and nine out of ten said they had not considered more than one place as a destination. For many, a jump from an isolated rural village to being a virtual stranger in the city is a traumatic event. Among reasons given as to why it was the worst move, a third named social reasons (leaving family and friends, no new friends) a fourth named environmental and spatial reasons (too far from home village, disliked the new place, etc.), and almost one-sixth each named economic (no good opportunities, poor pay, etc.) or psychological reasons (too young, too much of a change, etc.).

The second move for many migrants was a reaction to the negative experience of the first move, and for many migrants this move also turned out to be unsatisfactory. Figures 6 and 7 illustrate these initial moves. Figure 6 shows the flow of migrants from Aldea San Francisco into the five settlement levels over the first two moves. Considerable movement among levels had taken place by the end of the second move and continued to do so throughout the move sequence (not shown here). The effect of many of those moves on the settlement hierarchy was cancelled out. Figure 7 illustrates that only for the reactive second move do the totals in each settlement level shift greatly. The movement back to the dispersed population level (one-third of all second moves returned to that level) and away from the metropolitan and simple urban levels show up dramatically. After the third move, however, the distributions are nearly identical to that after the first move.

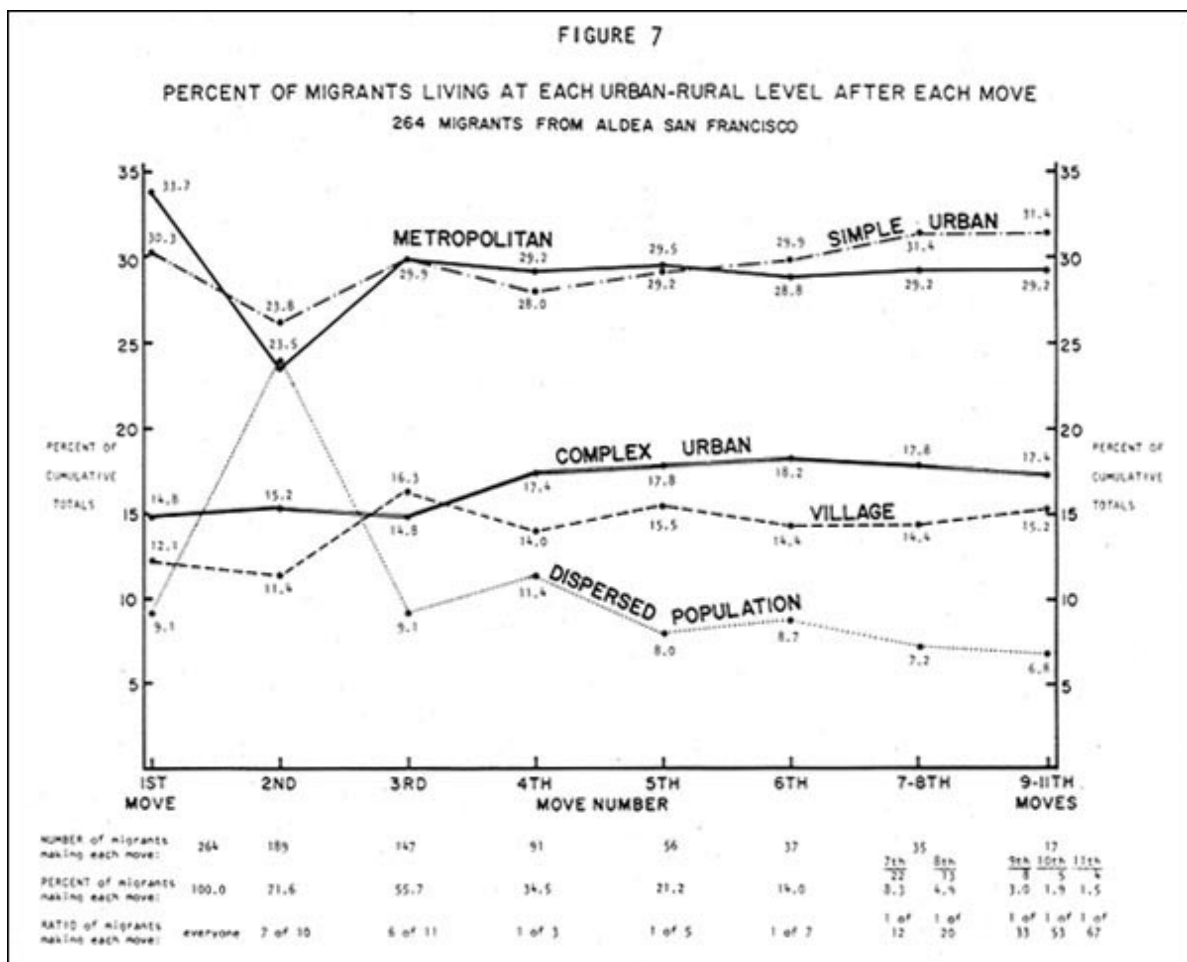


Nearly one-third of all moves through 1975 (30.7 percent) were last moves, for a ratio of 3.3 transitory moves to each latest move. Not all latest moves are permanent, but the majority will be. Environmentally and spatially motivated moves had the most favorable ratio of transitory moves to permanent moves (see Table 2). Out of 109 environmental and spatial moves, 59 were permanent (54 percent) through 1975 compared to 39 percent of socially motivated moves, 23 percent of those economically motivated, and only 14 percent of moves motivated by psychological reasons. Of the total number of latest moves, socially motivated causes led with 33 percent, followed by economically motivated with 29 percent and environmentally spatially/motivated with 23 percent.

### *Final Location Versus Perceived Ideal Location in the Settlement Hierarchy*

The satisfaction of each migrant with his or her current location was measured in two ways: 1) satisfaction with the latest move, and 2) a comparison of their "ideal" location in the settlement hierarchy with their actual location in 1975. Nine out of ten migrants from Aldea San Francisco said they were either "very satisfied" (68 percent) or "satisfied" (20 percent) with their latest move again. When asked to name the "ideal" location in the urban-rural hierarchy in which to live, (see Table 3,) only a little over a third of females and a fourth of males were currently residing at their "ideal level" (see Wilkie, 1980a, 157-184; Wilkie and Wilkie, 1980a, 135-151).

In general, male and female migrants from Aldea San Francisco have very different preferences on city size and urban complexity. Female migrants prefer less isolation and enjoy urban life more. Their highest rate of satisfaction is found in the metropolitan level where 61 percent want to remain. The metropolitan level has also the strongest attraction for migrant women living in both complex urban centers (44 percent want to move to metropolitan areas) and simple urban centers (39 percent want to go there), while 40 percent of women living in villages also named the metropolitan level as "ideal." Together seven out of ten female migrants from Aldea San Francisco opted for life in either metropolitan or complex urban centers when given the choice. Even women currently living in rural areas preferred the nucleated village to the open isolation of dispersed settlement, with 50 percent of village women expressing satisfaction with their current location as opposed to only 18 percent of women in dispersed areas.



Among male migrants from the village, on the other hand, there was a definite attraction for the rural areas (43 percent) and, compared to females, much less for, the two largest urban levels (37 percent). In addition, eight out of ten males (78 percent) who are already living in areas of dispersed population want to remain there, the only level in the urban-rural hierarchy other than village that received more than 20 percent satisfaction among male migrants. On one point male and female migrants show relative agreement: neither group currently living in simple urban or complex urban centers is particularly satisfied with life there. Only 14 percent of males and 17 percent of females would remain in simple urban centers between 2,000 and 20,000 population if given the option, while for complex urban centers between 20,000 and 500,000 population these percentages are 20 for males and 24 for females.

TABLE 3

CURRENT LOCATION COMPARED WITH  
PERCEIVED IDEAL LOCATION IN THE URBAN HIERARCHY  
264 migrants from Aldea San Francisco, 1974-75  
-IN PERCENTS-

### MALES

CURRENTLY living in:	IDEALLY, would like to live in:				total percent	N=
	village- dispersed % satisf.	simple urban	complex urban	metropolitan		
DISPERSED 14.7%	78	11	6	6	101	18
VILLAGE 10.7%	38	38	16	8	100	13
SIMPLE URBAN 33.6%	32	14	22	32	100	41
COMPLEX URBAN 8.2%	40	10	20	30	100	10
METROPOLITAN 32.8%	42	25	15	18	100	40
total percent preferring each level:	43%	20%	16%	21%	100%	
N=	53	24	20	25		122
						(10 males had no opinion)

### FEMALES

CURRENTLY living in:	IDEALLY, would like to live in:				total percent	N=
	village- dispersed % satisf.	simple urban	complex urban	metropolitan		
DISPERSED 9.0%	18	27	46	9	100	11
VILLAGE 8.1%	50	10	0	40	100	10
SIMPLE URBAN 29.3%	11	17	33	39	100	36
COMPLEX URBAN 20.3%	16	16	24	44	100	25
METROPOLITAN 33.3%	20	2	17	61	100	41
total percent preferring each level:	19%	12%	24%	45%	100%	
N=	23	15	30	55		123
						(9 females had no opinion)

Clearly these middle level centers lack something that helps to meet the needs of rural in-migrants. Part of the reason may be that few of the jobs, goods, capital, services, and related amenities found in metropolitan areas are available in middle level centers. Some migrants to these middle level cities stated that they have the urban problems without the compensation of real urban/cultural amenities, and



they have lost the best of what the rural environment could offer as well.

One additional observation on community-size selection stands out. Migration flows often bypass some intervening cities. Many of the migrants making the first move passed through these centers on their way to Gran Buenos Aires or other distant points. The nearby complex urban centers of Parana and Santa Fe and the metropolitan center of Rosario together received less than 8 percent of all migrants by 1975. While many of these centers have job opportunities similar to those in Gran Buenos Aires, the few migrants they did attract were predominantly lower-class women who became private-household workers. Clearly, for most migrants from the village, other forces are playing a more important role in their migration decisions than are ease of access to or prior knowledge of nearby large urban centers.

## **Conclusion**

This study attempts to build a framework to understand the dynamics of settlement change and migration in Latin America. Settlement changes between 1950 and 1970 are traced using a classification system that indicates which two of the five urban-rural levels dominate the settlement hierarchy in each country. During this period Latin America as a whole went from a dispersed-simple urban classification (0-2) in 1950, with three-fourths of the population living in communities under 20,000 in size, to a dispersed metropolitan classification (0-4) in 1970 with nearly half of the population living in cities over 20,000. Within Latin America there were five distinct regions with relatively homogeneous patterns of settlement hierarchy and evolution. These regions were: 1) southern South America (3 countries), which went from metropolitan-dispersed in 1950 to metropolitan-complex urban by 1970; 2) Andean South America, Brazil, and Paraguay (7 countries), which has remained primarily dispersed but by 1970 had developed a significant metropolitan level; 3) Mexico and Panama, which evolved from primarily village populations to countries where the complex urban level is also significant; 4) the Caribbean, which saw the Dominican Republic join Cuba by 1970 with a dispersed metropolitan classification; and 5) Central America (5 countries), which remained as the most rural region in Latin America with all countries either dispersed-simple urban or dispersed-complex urban by 1970.

Understanding these patterns of the urban settlement systems in Latin America is only a first step. More detailed studies such as the one presented on Mexico between 1910 and 1970 show that a much more complicated development of the

urban system takes place within nations. In the case of Mexico it was possible to see that the evolution of higher order settlement hierarchies started in the north and formed homogeneous zones that moved to the south in waves. Mexico City and Guadalajara are exceptions to this, but neither metropolitan area appears to have strongly influenced the settlement hierarchy classification outside of its immediate hinterland in the way it has occurred in the north of Mexico.

These different settlement hierarchies have implications for the types of urban and rural problems found in Latin American countries and their subregions. Activities that interconnect and channel the flow of people, ideas, and services throughout the various urban-rural levels are affected by the types of hierarchies that exist. In settlement hierarchies dominated by primate cities, migrants have few options except to go to the largest metropolitan areas where jobs and services have been concentrated. When small regional urban centers are capable of serving the dispersed population with basic economic and social services such as schools, medical facilities, meeting houses, and movie theaters, and perhaps more importantly, small factory and service sector jobs that will hold people in an area, the quality of rural life in many regions throughout Latin America will be enhanced. Without numerous focal points for economic and social activities distributed on the landscape, the rural population is forced to maintain these relationships with more distant regional centers or national capitals. While an ideal urban-rural settlement hierarchy most likely varies for individual countries and at different points in time based on the level of development, available resources and technology, and national priorities, overall it appears that a balanced hierarchy perhaps with decreasing proportions of population going down the hierarchy, provides a more even flow and interconnection within modern urban networks.

One way to assure a more balanced distribution of settlement sizes is to strengthen middle and lower level regional centers. Unfortunately, stimulating growth in regional centers outside of the dominant national capitals has not been easy. In Argentina, an effort to stem the growth and dominance of Gran Buenos Aires through a series of laws, executive orders, and decrees has not helped the situation, but recent tax incentives for relocating have led to the movement of some small factories to interior towns. This has begun to have an impact on migration flows from Aldea San Francisco, channeling migrants away from metropolitan Buenos Aires to simple urban centers in Santa Fe and Entre Rios provinces. Industrial and commercial expansion of small and middle range centers provides options that will attract and hold population in the areas of origin

(Lentnek, 1980; Johnson, 1970, 178-207). Clearly the more that is known about the evolution of settlement hierarchies the more readily development or non-development decisions can be made to help alleviate many and rural problems before they arrive or are compounded.

These policy decisions, along with the developmental process in general, have major impact at the individual level. Forces that appear to help the situation for some groups may contribute heavily to the problems for other groups. For example, improved transportation in the rural areas of Latin America has not increased access to services, goods, and ideas for all segments of the population. With the rapid rise in the 1970s of the ownership of automobiles and trucks in the rural sectors of many countries in Latin America, the distances between the villages and the regional centers have been reduced, at least for the upper and middle class rural families. However, auto travel tends to bypass the lowest order urban centers to reach higher order urban centers with a greater range of services, thus further weakening villages and simple urban centers. When this occurs, as it has in Brazil, Argentina, and other countries, lower class rural populations are even more isolated from economic and social options and are more likely to be forced out of the rural areas in search of work, thus adding to the concentration of populations in larger communities.

While many migrants who are more suited for life in rural areas are forced out of these places for economic reasons, out-migration also has positive effects on migrants and on the source communities and their inhabitants. In the case of Aldea San Francisco, out-migration has reduced the population pressure on the land, allowed for increased land holding and mechanization, and led to greater production. For many who left, the urban option represented the best chance of increasing their standard of living, and their hard work and achievement orientation has been a vital input into the urban sector of Argentina. Women especially are more satisfied with life in urban centers and seven out of ten female out-migrants from the village want to live either in metropolitan centers or in complex urban centers. Many male out-migrants also want to live in larger urban communities, but a larger proportion think rural areas like Aldea San Francisco are the ideal place to live. It is clear the migration process is extremely complicated and seldom ends with only one move. Rather, for many it is a long drawn out search process where individuals attempt to meet needs and aspirations that shift over various stages of the life cycle.

The migration decisions for Aldea San Francisco are representative of the

migration process in a country at the urban extreme of the continuum. While the shift from a rural to an urban economy and life style that has taken place there will eventually be followed by many other countries of Latin America, studies are needed comparing nations at all levels of the urban-rural continuum. Micro-studies of migration at the village level as well as studies of migration processes into and out of simple urban, complex urban, and metropolitan level communities are needed. There is also a great need for migration research that traces different migrant types out of particular communities and restudies them over time as they eventually either assimilate or fail to adjust into new environmental settings.

Studies such as those outlined above will provide some guidelines that can help to direct social and economic planners. Those planning for a more rational distribution of population on the landscape need to know more about the internal processes or forces shaping communities of all sizes in the urban-rural hierarchy. If the developmental needs of intermediate level cities are ignored in favor of primate cities, the urban system may in time begin to break down, thus leading to greater imbalances of population and opportunities. Urban systems that have a relative balance in population and development in all levels of the urban hierarchy will provide an expanded series of options for citizens at all levels. Understanding how settlement hierarchies develop in these countries may lead to the development of options for the rural populations, the migrants, and to the creation of situations leading to a greater sense of satisfaction for those living in communities of all population sizes.

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## References Cited

- Ball, J. *Migration and the Rural Municipio in Mexico*. (Atlanta: Georgia State University, Bureau of Business and Economic Research, 1971).
- Doherty, P. and J. Ball. "Central Functions of Small Mexican Towns," *Southeastern Geographer*, Vol. 11 (1971), 20-28.
- Ducoff, L.E. "The Role of Migration in the Demographic Development of Latin America," *Milbank Memorial Fund Quarterly*, Vol. 43 (1965), 197-210.
- Elizaga, J. "International Migration in Latin America," *Milbank Memorial Fund Quarterly*, Vol. 43 (1965), 144-161.
- Ginsburg, N. *Atlas of Economic Development*. (Chicago: University of Chicago Press, 1961).
- Gottman, J. *Megalopolis: The Urbanized Northeastern Seaboard of the United States*. (Cambridge, MA: Harvard University Press, 1970).
- Johnson, E.A.J. *The Organization of Space in Developing Countries*. (Cambridge, MA: Harvard University Press, 1970).
- Lentnek, B. "Regional Development and Urbanization in Latin America: The Relationship of National Policy to Spatial Strategies," in R. Thomas and J. Hunter (eds.) *Internal Migration Systems in the Developing World, With Special Reference to Latin America*. (Cambridge, MA: Schenkman, 1980).
- Luna, G. "Megalopolis Trends in Mexico," *Ekistics*, Vol. 24 (1969), 15-20.
- United Nations. "World Urbanization Trends as Measured in Agglomerations, 1920-1960." in *Growth of the World's Urban and Rural Populations, 1920-2000*. (New York: United Nations, 1969). Population Studies, No. 44.
- United Nations. *Annual Report of Population Trends*. (New York: United Nations Fund for Population Activities, 1980).
- Wilkie, J. and P. Reich. *Statistical Abstract of Latin America, Vol. 18*. (Los Angeles: UCLA Latin American Center, 1977).
- Wilkie, J. and P. Reich. *Statistical Abstract of Latin America, Vol. 19*. (Los Angeles: UCLA Latin American Center, 1978).

Wilkie, R.W. "Toward a Behavioral Model of Peasant Migration: An Argentine Case of Spatial Behavior by Social Class Level," in R.N. Thomas (ed.) *Population Dynamics of Latin America; Proceedings of the Conference of Latin Americanist Geographers, Vol. 2.* (East Lansing: CLAG Publications, 1973a).

Wilkie, R.W. "Selectivity in Peasant Spatial Behavior: Regional Interaction in Entre Rios, Argentina," *Proceedings of the New England-St. Lawrence Valley Geographical Society, Vol. 11.* (1973b), 10-20.

Wilkie, R.W. "The Process Method Versus the Hypothesis Method: A Nonlinear Example of Peasant Spatial Perception and Behavior," in Maurice Yeates (ed.) *Proceedings of the 1912 International Geographical Union Commission on Quantitative Geography.* (Montreal and London: McGill-Queen's University Press, 1974), 1-31.

Wilkie, R.W. "Urban Growth and the Transformation of the Settlement Landscape of Mexico: 1910-1970," in J.W. Wilkie, M. Meter, and E. Monzon de Wilkie (eds.) *Contemporary Mexico: Papers of the IV International Congress of Mexican History.* (Berkeley and Mexico: University of California Press and El Colegio de Mexico, 1976), 99-134.

Wilkie, R.W. "Population Cartograms and Political Subdivisions: Latin American Populations in the 1970s," in J. Wilkie and P. Reich (eds.) *Statistical Abstract of Latin America, Vol. 18.* (Los Angeles: UCLA Latin American Center, 1977), 1-26.

Wilkie, R.W. "Migration and Population Imbalance in the Settlement Hierarchy of Argentina," in D. Preston (ed.) *Environment, Society, and Rural Change in Latin America: The Past, Present and Future in the Countryside.* (New York: Wiley, 1980a), 157-184.

Wilkie, R.W. "The Rural Population of Argentina to 1970," in J. Wilkie and P. Reich (eds.) *The Statistical Abstract of Latin America, Vol. 20.* (Los Angeles: UCLA Latin American Center, 1980b), 561-580.

Wilkie, R.W. *The Population of Latin America in the 1970s.* (Los Angeles: UCLA Latin American Center, forthcoming). Supplemental Series of the Statistical Abstract of Latin America.

Wilkie, R.W. and J.R. Wilkie. "Environmental Perception and Migration Behavior: A Case Study in Rural Argentina," in R. Thomas and J. Hunter (eds.) *Internal Migration Systems in the Developing World, With Special Reference to Latin America.*

(Cambridge, MA.: Schenkman, 1980a), 135-151.

Wilkie, R.W. and J.R. Wilkie. *Migration and an Argentine Rural Community in Transition*. (Amherst, MA: University of Massachusetts, 1980b). Latin American Studies Center Occasional Paper Series.

Wolfe, M. "Rural Settlement Patterns and Social Change in Latin America," *Latin American Research Review*, Vol. 1 (1966), 5-50.