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Reassessing the Guayana Project: Migration to and from Bolívar State, Venezuela, 1950-1990

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Abstract

The concentration of population in the capital cities of developing countries by the mid twentieth century prompted several of these countries to embark on elaborate population redistribution projects. Ciudad Guayana, a city in Southeastern Venezuela, was one such project designed to produce a more equitable distribution of population and economic resources throughout the country. This paper examines changes in the origin and destination states of in and outmigrants to and from Bolívar State (the location of Ciudad Guayana) and the other 22 states of Venezuela from before the implementation of the Guayana Project in 1950 to 1990, the latest census, to determine the effect that the new city had on the attraction of inmigrants from other states as well as the retention of possible outmigrants from Bolívar State.

1. INTRODUCTION

In many developing countries rapid urban growth since the mid-twentieth century has caused much alarm. How to provide employment, housing and public services to the growing numbers of urban dwellers will undoubtedly remain important problems for these nations well into the twenty-first century. As countries go through the process of economic development, a greater percentage of the population tends to congregate in the capital region in order to take advantage of economic, educational, political, and cultural resources (Jefferson, 1939; El-Shahks, 1972; and Mehta, 1964). This agglomeration process tends to create a lop-sided form of economic development that favors the capital region at the expense of the periphery of the country. In an attempt to alleviate the concentration of population in the capital region, many developing countries have adopted population redistribution policies. Since the 1960s, these policies have been implemented with limited success in such diverse countries as Tanzania (Sawers, 1989), Egypt (Stewart, 1996), South Africa (Dewar, Todes, and Watson, 1986), Peru (Jameson, 1979), Mexico (Barkin, 1975), Brazil (Semple, Gauthier, and Youngmann, 1972), Thailand (Sternstein, 1979), Taiwan (Williams, 1988), and Indonesia (Firman, 1997).

Probably the most grandiose population redistribution project undertaken during the mid-twentieth century was in Venezuela. The Venezuelan government used its oil wealth to create an industrial complex in the southeast to act as a growth pole to direct population and economic resources away from the overcrowded metropolis of Caracas. The planned industrial city emerged out of two mining settlements at the confluence of the Caroni and Orinoco Rivers and grew from an urban population of approximately 3,500 in 1950 to 453,047 by 1990 (Venezuelan Census, 1995). Since Venezuela was one of the newly industrializing nations of the developing world, it was hoped that policies concerning population redistribution enacted in Venezuela could be appropriately applied to other developing nations of the world. Unfortunately, social scientists lost interest in the demographic impact of Ciudad Guayana after the 1970s, as the growth pole philosophy came under attack by those who believed that deconcentration of population and economic resources would occur naturally as a country went through the process of economic development (Richardson, 1984; Oberai, 1993).

There have been no studies that have examined migration flows to and from Ciudad Guayana on a longitudinal basis. This study attempts to help fill this void in the literature. This work does not dispute the fact that migration to Ciudad Guayana

increased substantially during the 1960s and early 1970s. Earlier studies have clearly indicated this to be the case (Rodwin, 1969; Friedmann, 1969).

All data used in the analysis are from the Venezuelan Censuses for 1950, 1961, 1971, 1981, and 1990. Unfortunately, the Venezuelan Censuses did not record migration flows by city. The lack of these data necessitates an indirect approach to the migration problem. The only comparable migration data over the five census years are migration exchanges between the 23 states of Venezuela. Each census recorded the state of birth and present state of residence at the time of the census for all individuals who were born in Venezuela. Henceforth, these individuals will be considered either life-time in or outmigrants. Foreign-born individuals are not considered in this study.

The major focus of the paper is to detect changes in the importance of origin and destination states of life-time migrants to and from Bolívar State that may be attributed to the creation of Ciudad Guayana. Instead of focusing on actual numbers of life-time inmigrants to Bolívar State from the other 22 states of Venezuela between 1950 and 1990, this paper examines the percentage of life-time inmigrants to Bolívar State that originated from each of the other 22 states of Venezuela (Figure 1) in 1950, and the changes that occurred by 1990. Likewise, the percentage of life-time outmigrants from Bolivar found in each of the other Venezuelan states is compared with the percentages for 1990. The argument is that Ciudad Guayana changed the migrational patterns between Bolívar State and the remainder of the Venezuelan states over the forty year period. The average distance traveled by a life-time inmigrant or outmigrant to and from Bolívar State during this time is also provided as supporting evidence for the shifts in origin and destinations of life-time migrants to and from Bolívar State.

Figure 1 Venezuela by state, 1990

Migrant exchange ratios between Bolívar State and the other 22 states are also examined for the five census years. These ratios compare the number of life-time inmigrants to outmigrants between Bolívar State and each of the other Venezuelan states. A figure of 1.0 represents an equal exchange of life-time migrants between Bolívar State and another state. Figures below 1.0 represent a loss of net migrants from Bolívar State, while figures above 1.0 represent a net gain for Bolívar State.

BACKGROUND:
Venezuela's Experience with the Guayana Project:
The general consensus concerning the Ciudad Guayana project was that it failed in its attempt to divert both migrants and economic resources from the capital region (Friedmann, 1965; Rodwin, 1969; and Peattie, 1987). Even though approximately 1,000 migrants were streaming into the new city every month as of 1967 (Proctor, 1968), little of the flow originated from the capital region or the overpopulated rural states of Western Venezuela. The early migrational flows were mostly unskilled rural migrants from Eastern Venezuela instead of skilled personnel from the capital region as initially intended (Rodwin, 1965; Friedmann, 1969; Turner and Smulian, 1971). Further spurring the uncontrolled growth of the city

was that the majority of migrants to Ciudad Guayana consisted of families from the surrounding eastern states, where women maintained some of the highest fertility levels in Venezuela and likewise continued this behavior once relocating to Ciudad Guayana (MacDonald, 1969).

From an economic perspective, the success of the program was equally discouraging. Roesler and Azam (1990) claimed that Ciudad Guayana did not achieve its intended objectives because planners had relied on a unidimensional strategy of development which entailed only developing the industrial sector at the expense of the agricultural sector. The channeling of a great proportion of economic resources into the industrial sector may have increased production levels, employment and GNP, but it also led to some negative externalities. A few examples of problems with this particular development strategy include unmanageable population growth, income disparities and increased costs of living. According to Artle (1971) the design of the Ciudad Guayana industrial complex was an unwise use of resources because manufacturing is a highly capital-intensive operation and, although the city attracted migrants, there were not enough employment opportunities to fulfill these needs. Reif (1987) addressed the question as to whether government policies were effective in the deconcentration of industry away from the Caracas metropolitan area to Ciudad Guayana. He found that for 1974-1978 the deconcentration in industry that did occur had little to do with government incentives.

Venezuelan Migration Studies with Reference to Bolívar State:
Chen (1968) in his study of internal migration in Venezuela was one of the first to call attention to the fact that the state of Bolívar had switched from being a state of negative net migration prior to 1950 to one of positive net migration by the end of the 1950s. Lawson and Brown (1987) found a significant relationship between the process of industrialization and inmigration rates to the state of Bolívar in the early 1970s and concluded that Caracas was less important economically and a less significant destination for migrants than it had been prior to the 1970s. Brown and Goetz (1987) combined place attributes with individual attributes in the migration equation to determine the effect that economic development had on out-migration from particular districts in Venezuela and found that population pressure and the economic structure of the district, as well as the educational level of individual migrants, explained approximately two-thirds of the variance in migration. More importantly, the authors found that the district containing Ciudad Guayana conformed to the characteristics for districts housing other major cities, and that by 1971 Ciudad Guayana had taken its place as a core district in terms of economic development. Brown and Kodras (1987) found in their analysis of 1971 census data of migration between rural areas, frontier regions and core regions that, as far as Ciudad Guayana was concerned, the inmigration flows to the region were migrants who were less endowed in human capital than the out-migrants moving to the core region. The researchers admit that this pattern may indeed change as the frontier regions undergo further development as will be determined by the 1981 and 1990 censuses.

DISCUSSION:
Comparison of Life-Time In, Out, and Net Migration for the Bolívar State for 1950 through 1990:
Life-time inmigration, outmigration, and net migration for Bolívar State with the other 22 Venezuelan states are recorded for 1950, 1961, 1971,1981, and 1990 in Table 1. In 1950, Bolívar State had a net life-time migration loss to the other states of Venezuela of 10,283 individuals. By 1961, Bolívar State had a net life-time migration gain of 4,860 individuals. The new city of Ciudad Guayana had just been completed and attracted migrants from the surrounding states. It is also probable that potential migrants out of Bolívar State would have also settled in the new city. Net life-time migration gains to Bolívar State climbed to 56,230 individuals in 1971 and then to 128,118 life-time individuals by 1981, before leveling off at 157,347 by 1990. One must be extremely cautious in interpreting these figures. While it is apparent that Bolívar switched from a net loser of life-time migrants in 1950 to a net gainer of migrants with every successive decade from 1961 to 1990, one must also consider that Venezuela's population increased by 259.5 percent between 1950 and 1990 as a result of rapidly declining death rates (Statistical Abstract of Latin America, 1997), which provided a tremendous pool of potential migrants. Likewise, Bolívar State's pool of potential life-time outmigrants would be affected by natural increase over the decades attributed to the flow of migrants into Bolívar State.

TABLE 1. **Life-Time In, Out, and Net Migration for the Bolívar State, 1950-1990.**

Year	Life-Time In	Life-Time Out	Life-Time Net
1950	15,467	25,750	-10,283
1961	40,785	35,928	4,860
1971	103,918	47,683	56,230
1981	202,452	74,334	128,118
1990	243,765	86,418	157,347

Source: Compiled from Table 12. Décima Censo de Venezuela. 1975. Tables 1.7.

Venezuela: XI Censo General de Población y Vivienda. Vols. 1-23. 1981-1986; and
Table 7. Características Generales. El Censo 90 en Venezuela. Central de
Estadística e Informática. 1995

The numbers of life-time migrants to and from Bolívar State for each of the other 22 states of Venezuela from 1950 to 1990 are displayed in figures 2A and 2B.
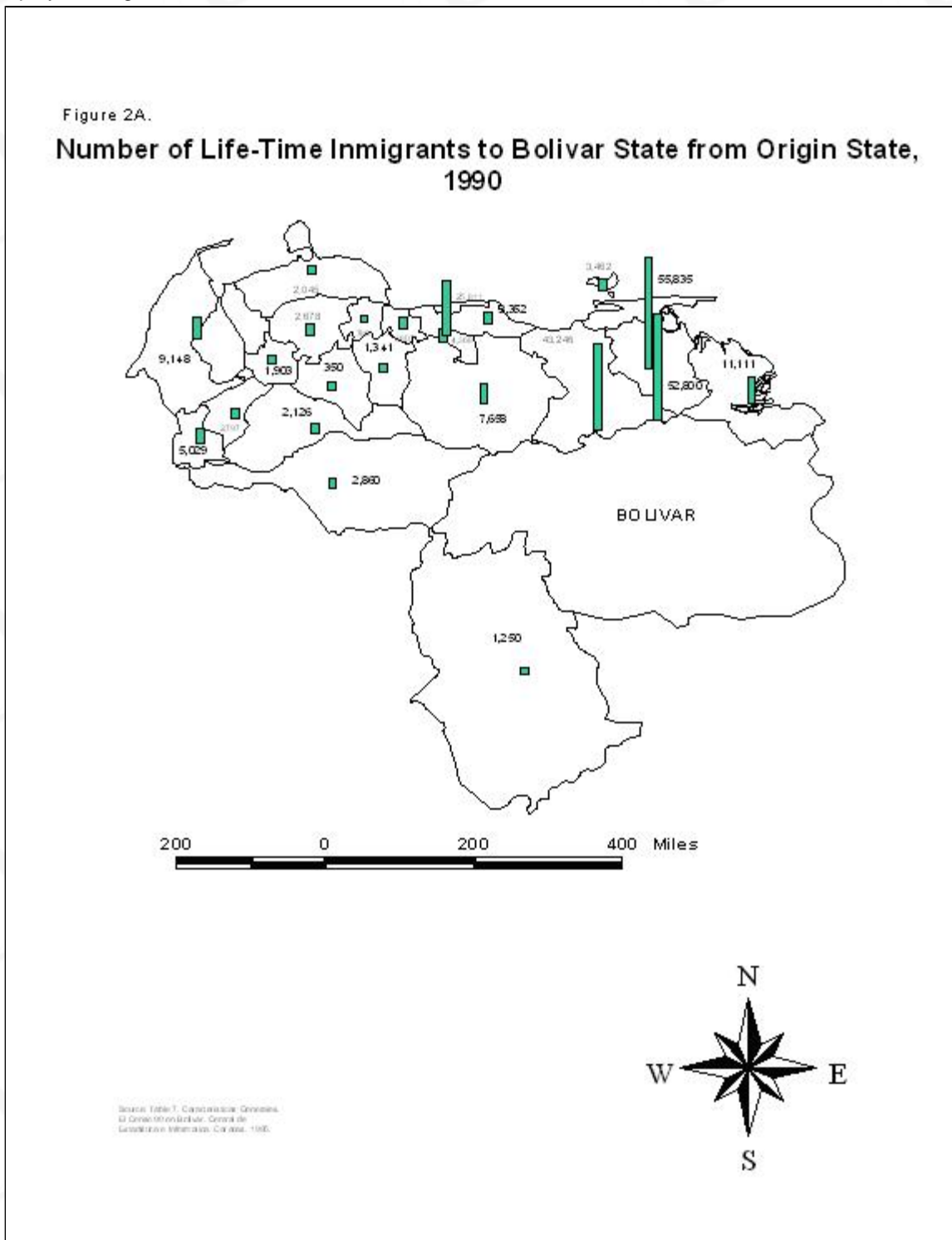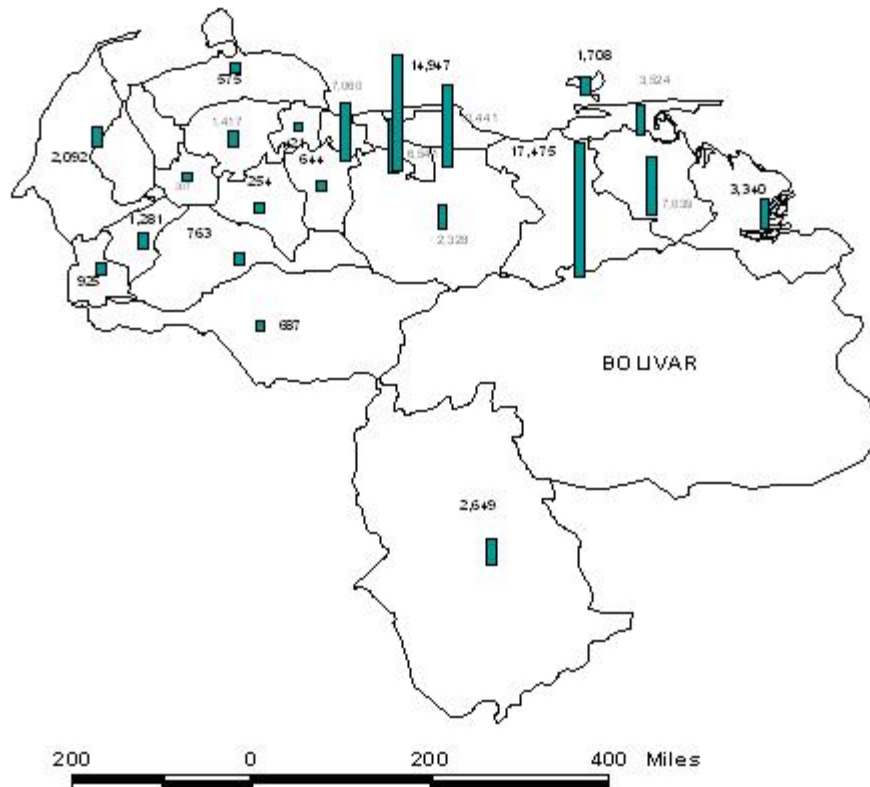

Figure 2A.
Number of Life-Time Inmigrants to Bolivar State from Origin State, 1990

Figure 2B.

Number of Life-Time Outmigrants from Bolivar State to Destination State, 1990

The directional bias of life-time inmigrants is obvious, given that the Northeastern States provided the bulk of life-time inmigrants to Bolívar State. The western states provided relatively few migrants and this is most likely a result of the distance between Bolívar State and these states as well as alternative opportunities that would be available in the capital region. Life-time outmigrants from Bolívar State as of 1990 were less constrained by distance than life-time inmigrants and were more represented in the capital region (the Federal District, Aragua, Carabobo, and Miranda). Average distance traveled by life-time migrants to and from Bolívar State for the five census years will be further examined in a another section.

Percentage Distribution of Life-time In and Outmigrants to and from Bolívar State for 1950 and 1990:
A comparison of the percentage life-time inmigrants to Bolívar State that originated in the other 22 Venezuelan states is displayed in Table 2 (located at the end of this section). Over the 1950 to 1990 timeframe, Bolívar began to pull a greater percentage of its total life-time migrant population from further afield. One of the most striking examples is that of the

Federal District, which in 1950 provided only 4.5 percent of the total life-time inmigrant population in Bolívar, whereas by 1990, 10.6 percent of the total life-time inmigrant flow was from the Federal District. However, the other states of the capital region, Aragua, Carabobo and Miranda, never sent as many migrants to Bolívar State as the Federal District did. The 1950 and 1990 percent composition of total migrants to Bolívar from these three states remained relatively unchanged. Miranda, Aragua and Carabobo were always more important as a destination for migrants from Bolívar than vice versa. One of the greatest losers in the inmigrant flow, in terms of the percentage of life-time inmigrants, between 1950 and 1990, was Anzoategui which contributed 33.9% of all migrants to Bolívar in 1950 but only 17.7% in 1990. By 1990, Anzoategui had receded to third place as a source of inmigrants to Bolívar--behind Sucre, 22.9% and Monagas, 21.7%. Delta Amacuro, Guarico, and Apure were also major losers in percent composition of the total migrant population between 1950 and 1990. Apure showed the greatest decline during this four-decade period. In 1950, 5.7 percent of all inmigrants to Bolívar hailed from this state, whereas by 1990 only 1.2 percent were represented in Bolívar's life-time inmigrant population. Guarico also receded from 8.3 percent of the total in 1950 to only 3.1 percent of the total in 1990. Sucre made the biggest gain for it had only 5.8 percent of the inmigrant total in 1950, which for that year made it the fifth greatest contributor of migrants to Bolívar, but had become the number one contributor by 1981 at 23.0 percent of the total. The eight states of the western highlands did not change much in their percentage contribution of migrants to Bolívar between 1950 with 7.3 percent of life-time inmigrants and 1990 with a comparable 7.0 percent of life-time inmigrants. It would appear that the western highlands as a source region was always outside the migration field of Bolívar. Zulia contributed only 1.1 percent of life-time migrants to Bolívar in 1950 but submitted a greater share of migrant population by 1990, 3.8%, indicating a much greater draw from Zulia than in earlier decades.

In 1950, the Federal District was the destination for almost one third, 32.7 percent, of outmigrants from Bolívar State (figure 2B, table 2), but by 1990, this figure dropped to only 17.3 percent. The Federal District failed to remain as attractive to Bolívar-born individuals as it was during mid-century. At this time, a process known as polarization reversal was occurring throughout the developing world. For many major cities, inmigration rates had lessened or in some circumstances reversed so that more individuals were leaving the major city of the country than entering (Rowland and Gordon, 1996; MacKellar and Vining, 1995; Villa and Rodríquez, 1996). While the Federal District was decreasing its share of outmigrants from Bolívar, the three surrounding states in the capital region were making significant gains. In 1950, Aragua, Carabobo, and Miranda only held a combined total of 8.2 percent of outmigrants from Bolívar. By 1990, these same three states held 27.3 percent of all outmigrants from Bolívar. Though much of the flow of outmigrants from Bolívar was still directed toward the capital region, it was more dispersed to the surrounding states of the capital region by 1990 than it was in 1950. The single greatest destination for outmigrants in 1950, Anzoategui, with 36.5 percent of the total, receded to second place with 20.2 percent of the total flow by 1990. Monagas and Sucre became more popular over the 1950 to 1990 period for outmigrants from Bolívar; 4.2 and 0.9 percent respectively in 1950, compared to 7.1 and 3.2 percent in 1990. By 1990, these two states were the greatest contributors of inmigrants to Bolívar. It is plausible that this substantial flow to Bolívar caused a countermigration in the opposite direction. Such a countermigration would account for the increased percentages of outmigrants from Bolívar found in Monagas and Sucre by 1990. One of Ravenstein's (1885) laws was that every major migration stream caused a countermigration stream due to the return of unsuccessful migrants to the origin as well as the migration of individuals from the destination to this locale due to the increased interaction between the two locales. Since the census records migration by state of birth, only migrants born in Bolívar, the origin, would be enumerated in the counterflow to Sucre and Monagas, since any returned migrants to either Sucre or Monagas would be enumerated as nonmigrants in the census data. The western highlands proved to be of greater attraction to outmigrants from Bolívar by 1990 than they had been in 1950. These eight states were the destination for 2.9 percent of all life-time outmigrants in 1950, while in 1990, 5.5 percent of migrants from Bolívar were enumerated in the highlands. It appears that outmigrants from Bolívar have extended their migration distance during the latter half of the twentieth century.

In summation, an examination of the percentage composition of total life-time inmigrants for Bolívar State would suggest that by 1990 Bolívar had drawn migrants from states further away than in the earlier decades of the study period. Changes in the direction of outmigrants from Bolívar State to other states in Venezuela between 1950 and 1990 are more difficult to discern. The next section examines the average distance traveled by a life-time inmigrant and outmigrant for Bolívar State for the five census years.

TABLE 2. Percentage Distribution of Life-Time In and Outmigrants to and from Bolívar State, by State, 1950-1990:

	IN					OUT				
	1950	1961	1971	1981	1990	1950	1961	1971	1981	1990
Federal District	4.5	5.3	5.9	9.5	10.6	32.7	36.2	35.4	22.3	17.3
Anzoategui	33.9	26.8	24.4	20.6	17.7	36.5	26.2	18.1	19.7	21.2
Apure	5.7	2.6	1.2	1.3	1.2	3.2	2.3	7.0	0.9	0.8

Aragua	1.5	0.9	0.8	1.4	1.8	3.3	4.3	1.4	7.7	7.6
Barinas	1.0	0.3	0.3	0.7	0.9	0.5	0.5	0.6	0.7	0.9
Carabobo	1.5	0.9	0.8	1.2	1.6	2.1	2.7	5.6	8.3	8.2
Cojedes	0.3	0.3	0.1	0.2	0.1	0.3	0.2	0.1	0.2	0.3
Falcón	1.6	0.9	0.9	0.7	0.8	0.7	1.1	0.4	0.8	0.7
Guarico	8.3	4.7	2.7	3.0	3.1	3.7	4.7	2.6	2.9	2.7
Lara	1.1	0.8	0.7	0.8	1.1	0.8	1.0	1.2	1.4	1.6
Mérida	1.0	0.6	0.5	0.7	1.1	0.2	0.4	0.7	1.3	1.5
Miranda	1.7	1.1	0.7	1.2	1.4	2.8	6.9	11.0	11.3	12.1
Monagas	15.0	20.6	24.7	22.4	21.7	4.2	3.4	4.7	7.1	8.1
Nueva Esparta	1.9	2.2	2.2	1.5	1.4	0.2	0.2	0.4	1.4	2.0
Portuguesa	0.3	0.2	0.3	0.4	0.6	0.4	0.5	0.8	0.7	0.7
Sucre	5.8	16.9	22.8	23.0	22.9	0.9	1.5	1.5	3.2	4.1
Tachira	1.6	1.2	0.9	1.6	2.1	0.3	0.5	0.5	0.7	1.1
Trujillo	1.3	0.8	0.6	0.7	0.8	0.2	0.3	0.2	0.3	0.4
Yaracuy	0.7	0.5	0.3	0.2	0.3	0.2	0.3	0.3	0.5	0.5
Zulia	1.1	1.2	1.9	2.6	3.8	2.0	2.9	2.7	2.4	2.4
Amazonas	1.2	1.0	0.5	0.5	0.5	3.2	2.7	3.2	3.9	3.1
Delta Amacuro	9.0	10.1	6.9	5.8	4.6	1.9	1.2	1.5	2.3	3.9

Source: Compiled from Table 12. Décima Censo de Venezuela. 1975. Tables 1.7
Venezuela: XI Censo General de Poblacion y Vivienda. Vols. 1-23. 1986; and Table 7.
Características Generales. El Censo Noventa en Venezuela. Central de Estadística e
Informática. 1995.

Average Distance Traveled by Life-time In and Outmigrants to and from the state of Bolívar:
Average distance traveled by a life-time inmigrant/outmigrant to or from Bolívar State for each census year was
determined by multiplying the number of migrants for each state by the distance in kilometers from the capital of that state
to Ciudad Guayana. Distance between capitals to measure migration flows in Venezuela has been used by a number of
researchers (Levy and Wadyck, 1971; Schultz, 1982). The data were then summed for all states and then divided by the
total number of life-time inmigrants to determine average distance. The same procedure was then repeated to determine
average distance traveled by life-time outmigrants from Bolívar State to the other 22 states for the five census years. In
1950, the average distance traveled by a life-time inmigrant to Bolívar was 372.8 kilometers (Table 3).

TABLE 3. Average Distance Traveled by Life-Time Migrants to and from Bolívar State,
1950-1990 (in Kilometers):

	IN	OUT
1950	372.8	489.3
1961	323.3	471.2
1971	312.3	485.9
1981	344.8	479.4
1990	373.3	463.8

Source: Características Generales. El Censo de Venezuela. Central de Estadística e
Informática. 1995.

This average distance decreased to 323.3 kilometers for life-time inmigrants to Bolívar as of 1961. The reason for this
dramatic decrease in average migrational distance was due to the attraction of migrants from adjacent states, who had
been spurred by the creation of Ciudad Guayana (Friedmann, 1969). By 1971, the average distance traveled by a life-time

inmigrant further declined to 312.3 kilometers. By 1981, the average distance traversed by a life-time inmigrant to Bolívar State increased to 344.8 kilometers, and then to 373.3 kilometers by 1990. As would be expected, as Ciudad Guayana continued to grow, its attraction to potential migrants expanded further throughout the country. This process underlies the concept of the gravity model of social interaction (Zipf, 1946), in which interaction is enhanced by the population of two entities, but curtailed by the distance between two entities (Stouffer, 1940). When applied to this specific migration problem, it is clear that an increase in the size of Ciudad Guayana (and thus Bolívar State) while distance remained unchanged would enhance the flow between Bolívar State and other states.

The average distance traveled by an outmigrant from Bolívar State in 1950 was 489.3 kilometers. In 1961, the average distance traveled by an outmigrant from Bolívar State declined to 471.2 kilometers. A plausible reason for this slight decline is that the new city of Ciudad Guayana siphoned off potential outmigrants from Bolívar State who may have proceeded to the cities of the Capital Region. In 1971, the average distance traveled by an outmigrant increased to 485.9 kilometers. By the early 1960s, the growth of employment opportunities in Ciudad Guayana could not keep pace with the influx of migrants from surrounding states (Blanco and Ganz, 1969). It is not unreasonable to assume that individuals in Bolívar State would seek employment opportunities in the capital region. The average distance traveled by an outmigrant in 1981 was 479.4 kilometers and 463.8 kilometers in 1990.

Throughout the time period studied, the average distance traveled by an outmigrant from Bolívar far exceeded that of the average inmigrant to Bolívar State. This differential was greatest in 1971 (173.6 kilometers). However, by 1990 the differential between life-time inmigrants and outmigrants was only 90.5 kilometers. Undoubtedly, transportation and communication linkages between Bolívar State and the other states were improved between 1950 and 1990. Such linkages may provide a sufficient explanation of the increase in the average distance of inmigrants to Bolívar State, but they do not adequately explain the decline in average distance for life-time outmigrants. A number of factors may account for the decline in distance for life-time outmigrants from Bolívar State. First, Bolívar-born individuals who left the state prior to the 1980s for the cities of the capital region may have returned once the Venezuelan economy experienced a downturn. Secondly, Bolívar-born individuals who migrated to the capital region may have returned for retirement. Thirdly, potential outmigrants from Bolívar State may not have been attracted to the states of the capital region due to the economic slump of the 1980s.

Migrant Exchange Ratios for 1950-1990:
A migrant exchange ratio is used to determine how equitable in and outmigrant flows are for a particular entity without using actual numbers (Chan, 1994). The significance of the ratio is that it allows values to be compared over different time periods. The migrant exchange ratio is computed by dividing the number of inmigrants to an entity by the number of outmigrants from that entity. A figure of 1.00 indicates an equal exchange of migrants between two entities with the end result 0 net migration for both entities. A figure above 1.00 indicates positive inmigration for the entity in question, while a figure below 1.00 indicates negative inmigration for that particular entity.

The migrant exchange ratios between Bolívar and the other 22 Venezuelan states, treated as one entity, illustrate the dramatic shifts in life-time migration between 1950 and 1990 (Table 4). In 1950, Bolívar had a migrant exchange ratio of 0.60 indicating that it was a state of net life-time outmigration. Not surprisingly, with the completion of Ciudad Guayana in the early 1960s, Bolívar switched from a state of net outmigration to one of slight net inmigration with a migrant exchange ratio of 1.14. By 1971, with a migrant exchange ratio of 2.18, Bolívar State had twice as many life-time inmigrants from other states of Venezuela as it had Bolívar-born individuals residing in the remainder of Venezuela. Bolívar continued to be favored in net life-time migration exchanges in 1981 (2.72) and 1990 (2.82).

A more detailed picture of migrant exchange ratios between Bolívar and the remainder of Venezuela can be obtained by disaggregating the exchanges by state. In 1950 and 1961, a total of ten states had migrant exchange ratios with Bolívar State below 1.00, indicating that Bolívar lost in the net migration exchange with these states. By 1971, only six states had migrant exchange ratios below 1.00. In 1981 and 1990 the number was further reduced to four states. The Federal District in 1950 received many times the number of migrants from Bolívar as it sent to Bolívar in return (0.082). By 1981, the balance had tipped so that Bolívar had more life-time migrants from the Federal District than vice versa with a migrant exchange ratio of 1.16. By 1990, there were almost twice as many life-time migrants from the Federal District in Bolívar, with a migrant exchange ratio of 1.73, as there were Bolívar-born individuals in the Federal District. It is likely that a percentage of migrants who left Bolívar in the 1950s, 1960s and 1970s returned to Bolívar or dispersed to the surrounding states of the capital region. Surprisingly, migrant exchange ratios between Bolívar and the three surrounding states of the Federal District showed little change between 1950 and 1990, suggesting that there was not a mere deconcentration of Bolívar-born individuals throughout the capital region. Anzoategui, geographically positioned between the capital region and Bolívar, with a migrant exchange ratio of 0.56 received almost twice as many life-time migrants from Bolívar as it sent to Bolívar. Migrants from Bolívar may have proceeded on their trek to the capital region via Anzoategui, which would most likely have siphoned off some of the migrants. By 1961, the exchange between the two states was comparable (1.16). The incipient industrial city of Ciudad Guayana was just beginning to draw migrants from directly across the Bolívar-Anzoategui

border. During the 1970s and 1980s, Anzoategui was contributing between 2.5 and 3.0 times as many migrants as were being received from Bolívar. Zulia was another state that underwent a major transformation in migrant flow. In 1950, Bolívar's migrant exchange ratio with Zulia was 0.33 indicating that Bolívar sent three times as many migrants to Zulia as it received from Zulia. However, by 1990, Zulia had sent over four times as many life-time migrants to Bolívar as it had received from Bolívar. It is possible that the downturn of the economy in the 1980s stimulated outmigration of individuals from Zulia and at the same time potential outmigrants from Bolívar, would not be attracted to Zulia (Auty, 1990).

TABLE 4: Life-Time Migrant Exchange Ratios Between Bolívar State and the Other States of Venezuela, 1950-1990:

	1950	1961	1971	1981	1990
Federal District	0.08	0.17	0.36	1.16	1.73
Anzoategui	0.56	1.16	2.94	2.85	2.47
Apure	1.07	1.30	0.39	3.79	4.16
Aragua	0.27	0.23	1.21	0.50	0.67
Barinas	1.25	0.56	1.07	2.46	2.79
Carabobo	0.43	0.40	0.30	0.38	0.54
Cojedes	0.74	1.75	2.06	2.09	1.38
Falcón	1.38	0.96	4.26	2.38	3.56
Guarico	1.36	1.15	2.26	2.77	3.29
Lara	0.81	0.94	1.24	1.54	1.89
Mérida	2.58	1.62	1.57	1.59	2.18
Miranda	0.38	0.17	0.14	0.29	0.32
Monagas	2.16	6.82	11.40	8.66	7.50
Nueva Esparta	6.83	10.82	11.80	3.09	2.03
Portuguesa	0.47	0.57	0.76	1.67	2.08
Sucre	3.96	12.47	32.70	19.83	15.84
Tachira	3.49	2.77	3.64	5.79	5.44
Trujillo	4.50	3.17	5.25	6.49	6.20
Yaracuy	1.85	2.21	1.84	1.45	1.87
Zulia	0.33	0.46	1.53	2.97	4.37
Amazonas	0.23	0.43	0.38	0.33	0.47
Delta Amacuro	2.90	9.21	9.69	6.91	3.33
All States	0.60	1.14	2.18	2.72	2.82

Source: Compiled from Table 12. Décima Censo de Venezuela. 1975. Tables 1.7 Venezuela: XI Censo General de Población y Vivienda. Vols. 1-23. 1986; and Table 7. Características Generales. El Censo Noventa en Venezuela. Central de Estadística e Informática. 1995.

The most inequitable migrant exchange ratios were in 1971 and indicated the tremendous one-way exchange of life-time migrants between Bolívar and three states in the northeast, with Bolívar receiving over 32 times (32.7) as many migrants from Sucre as it sent to Sucre in return. Monagas, 11.4 and Delta Amacuro, 9.69 also had migrant exchange ratios that highly favored Bolívar. However, the two decades that followed showed a more equitable exchange between Bolívar and these states; this shift in exchange rate may be attributed to lower population growth rates in the northeastern states and perhaps TO return migration of individuals who migrated to Bolívar during the 1960s.

CONCLUSION:
Bolívar State was transformed from a state of net migration loss in 1950 to a state that had almost three times as many life-time inmigrants as life-time outmigrants by 1990. This turnaround in migration trends is mostly attributed to the creation of Ciudad Guayana, an industrial city in a former inaccessible region of the country. In 1950, 63.7 percent of the inmigrants to Bolívar State originated from the four northeastern states of Anzoategui, Monagas, Sucre and Delta Amacuro. The creation of Ciudad Guayana in 1959 stimulated a greater influx of migrants from these northeastern states

than the other states of the country so that by 1971, 78.8 percent of total life-time inmigrants to Bolívar originated from these four states. By 1990, a greater percentage of inmigrants were being attracted from states further away and only 66.9 percent of life-time migrants originated from the four northeastern states. For example, the Federal District became a more important source of inmigrants to Bolívar in 1981 and 1990. Whether this dispersal of population can be attributed to Ciudad Guayana or to a general trend in many developing countries to naturally undergo deconcentration of population away from the capital city may never be known. Perhaps the new city of Ciudad Guayana had obtained a population size and economic structure that allowed it to compete with other cities in Venezuela for potential migrants.

For destination of life-time outmigrants from Bolívar, the agglomeration of migrants in the capital region in the 1950, 1961, and 1971 censuses subsided, so that more migrants were found in other states of the country by the 1981 and 1990 censuses. The concentration of Bolívar-born outmigrants peaked in 1971 with 53.4 percent of all outmigrants from Bolívar residing in the capital region and declined to 45.2 percent by 1990. It is likely that the growth of Ciudad Guayana that was fueled by inmigration and natural increase as well as the development of the economic base over the 1950 to 1990 period provided a suitable alternative for potential outmigrants from Bolívar State by 1981 and 1990.

By using migrant exchange ratios, it was possible to track the in and out life-time migrant flows between the state of Bolívar and the other 22 states of Venezuela. In 1950, Bolívar lost migrants to ten states, whereas by 1990, it only lost migrants to four states. Overall, Bolívar's migrant exchange ratio increased with each census. This shift indicates a combination of three possible scenarios: 1) Bolívar became more attractive to individuals born in other states; 2) Bolívar became more successful in maintaining potential outmigrants who were born in Bolívar; or 3) individuals born in Bolívar returned to their state of birth. Of greater significance, concerning migrant exchange ratios, is the exchange of life-time migrants between Bolívar State and the four states of the capital region (the Federal District, Aragua, Carabobo, and Miranda). In 1950, Bolívar, with a migrant exchange ratio of 0.13, lost eight life-time migrants to the capital region for every life-time migrant it gained from the capital region. Although, Bolívar was never to gain more life-time migrants from the capital region than it sent to the capital region, by 1990 the migrant exchange ratio was 0.96, indicating almost an even exchange of life-time migrants between the State of Bolívar and the four states of the capital region. Given the results of this study, it appears that social scientists prematurely dismissed the role of Ciudad Guayana as a growth pole.

Two questions still await definitive answers. Was Ciudad Guayana responsible for the changes in the source and destination states of migrants to and from Bolívar State between 1950 and 1990? Was the implementation of the Guayana Program responsible for the favorable migrant exchange for Bolívar State between 1950 and 1990? The data suggest that this may be the case. However, internal migration does not occur in a vacuum. It is quite likely that other conditions were interacting to affect this relationship, such as the general increased mobility of individuals once a country proceeds through economic development.

The latest Venezuelan Census was undertaken in October 2000. It takes several years to collate the migration data between states and publish the data. The logical next step is an examination of migrational flows between Bolívar State and the other Venezuelan States over the 1950 to 2000 period.

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