

provide schooling and medical services as has been done in Australia and in other sparsely settled countries.

In short, the problem of settlement and development of the Central Plateau of Brazil is one which requires a combination of government and private resources, long-range planning and people with the characteristics and skills suitable for the prevailing conditions. Absentee owners should be expected to contribute their share to the development of the roads, and other facilities for the region. Plans for development should begin with the characteristics of the region and the people who are attracted to it. The policy decisions then need to be made as to how much the Central Plateau should contribute to efficient agricultural production or to the relief of population pressures from other regions. The two roles are not entirely incompatible, but the priority given to each view will affect the nature of the program and plans for the development of the region.

#### FOOTNOTES

1. Hilgard O'Reilly Sternberg, Lecture, University of Wisconsin, 1964.
2. See John van Es, E. A. Wilkening and João Bosco Pinto, *Rural Migration in Central Brazil: A Study of Itumbiara, Goiás*, Land Tenure Center, Research Series, University of Wisconsin, Madison, 1968.
3. American International Association for Economic and Social Development, Av. Franklin Roosevelt 23, Rio de Janeiro, March, 1963, *Survey of the Agricultural Potential of the Central Plateau of Brazil*.
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6. See Bertram Hutchinson, "The Patron-Dependent Relationship in Brazil: A Preliminary Examination," *Sociologia Ruralis*, Vol. VI, No. 1 (1966), pp. 3-30.
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8. The lack of neighborhood and community in Brazil has been noted by T. Lynn Smith in his paper presented at the Annual Meeting of the American Sociological Society, Miami, Florida, August, 1966.

## CHAPTER XVII

### RECENT CHANGES IN RURAL STRATIFICATION IN RIO DE JANEIRO

ARCHIBALD O. HALLER

The effects of economic growth on stratification is a topic of considerable interest to sociologists concerned with social change. The changes occurring in stratification systems are among the most pervasive influences in "transitional" societies. Except for a few recent articles, however, sociologists have published little on this subject.<sup>1</sup> This paper presents data regarding changes in stratification that have occurred in a rural area during a period of rapid economic growth in the region's urban center. The data refer only to objectives in *stratum* phenomena, not *class* interests or conflict.<sup>2</sup>

The paper assumes the existence of centers of economic growth whose influence radiates to peripheries.<sup>3</sup> Internationally, whole countries or even groups of countries are considered as such centers in relation to other countries.<sup>4</sup> Within a country, centres may be regions,<sup>5</sup> cities, or groups of nearby cities. For industrial nations the periphery includes the nonindustrial nations; for groups of cities in a region, it includes outlying regions and their cities; for cities, it includes the rural hinterland. A periphery usually supplies a center with agricultural and other raw materials, and it may serve as a market for manufactured goods.

Many western economic experts appear to believe that economic growth of a center is automatically beneficial to its periphery. In terms of stratification this would mean that economic growth in the center would produce a general enrichment of the surrounding rural area—a rise in real (monetary and nonmonetary) income of people from all social strata. In the extreme, this position may imply that the lower strata will contract as the middle and upper strata expand (this appeared to happen in the United States during the last half century).

On the other hand, some doubt that such enrichment necessarily occurs. There are at least three basic processes often believed to be more or less at odds with this position.

1. *Proletarianization*, implying that an increasingly large proportion of the population gains a livelihood by selling time and skills ("labor power") to an entrepreneur.<sup>6</sup>
2. *Impoverishment*, implying that at least those in some strata become increasingly poor.

3. *Polarization*, implying that the distance between strata will widen, the level of the upper strata rising while that of the lower strata falls.

Any or all of these processes are thought to occur within the centres as well as the peripheries.

The three concepts are a starting point, provided we note that they are logically independent. People may become proletarians while their real income increases or decreases; or the proletariat may come closer to, or move away from, the upper strata on any stratification variable. Also, the various strata may either approach each other or separate while all strata are becoming either richer or poorer. Proletarianization, impoverishment, and polarization do not necessarily vary together.

Two of these variables focus attention on an overly-restricted range of possibilities. The opposite of impoverishment is enrichment. Similarly, the opposite of polarization is equalization. Stratum polarization might be a concomitant of economic growth, but this is an empirical question, not a logical necessity. Conceivably, strata might polarize, stay as they were, or come closer together. Thus there are two meaningful variables logically unrelated to each other, except that they both describe states of stratification systems: impoverishment-enrichment is one such variable and polarization-equalization is another.

Proletarianization, however, has no single opposite. It implies two shifts, one from nonmonetary payment to money income, and another from self-employment to work for others. In agricultural areas the sharecropping stratum is not wholly bound to a money economy. But as that stratum declines, its population must move into another. Today this usually means that as the ex-sharecroppers become more dependent on employers who pay wages, they become proletarians. In rural Rio de Janeiro farm wage labor is an even more precarious existence than sharecropping because landlords normally provide the latter with important nonmonetary benefits.<sup>7</sup>

Another point deserves consideration. Some speak of "relative impoverishment", meaning that though the income of the lower strata is rising, that of the higher strata is rising faster.<sup>8</sup> It is the combination of enrichment and polarization. But one should not jump to the conclusion that even this type of "injustice" is a necessary concomitant of growth unless the data show it to be.

In this paper broad hierarchical occupational strata are treated as the primary organizing principles of the stratification system.<sup>9</sup> *Stratum impoverishment* or *stratum enrichment* refers to an absolute change in real income of a certain occupational stratum. *General impoverishment* or *general enrichment* refers to the change in real income over the entire stratification system.

The various combinations of these concepts and variables lead to a number of possible effects of a center's economic growth on stratification in the periphery. At present there appears to be no defensible theoretic

basis for expecting that any particular combination will be present in any one situation. However, many people concerned with development seem to believe that one or another of the following outcomes is likely.

1. Most of the population of each stratum of the periphery will be enriched.
2. Most of the total population of the periphery will be enriched, irrespective of stratum (poorer strata may tend to disappear).
3. Most of the population of most of the strata of the periphery will be enriched.
4. The population of the periphery will tend to become proletarianized.
5. The strata of the periphery will tend to polarize; and
6. Either the population of each stratum of the periphery will be impoverished; or
7. The population of the lower strata of the periphery will be impoverished.
8. If the growth of the center is so vigorous as to overcome both the absolute impoverishing effects on the lower strata and the absolute impoverishing effects on the periphery as a whole, relative impoverishment will occur in the periphery.

### Method

*Data.* Interview data for this project were collected by students supervised by John Harrison Kolb in July 1953, and by the writer in July 1962. At both times, our aim was to interview the head of household (or someone who could speak for him) in a random one-fifth sample of households falling within the rural trade-areas of the key towns of each of four *municípios* in the hinterland of the city of Rio de Janeiro. In 1962, a one-sixth sample was drawn in one area. No data were collected in the towns. Care was taken to use the same boundaries both times, except where the central urban area had expanded into what had earlier been the countryside. In the latter case new town-country, or inner, boundaries were established. The outer boundaries were unchanged. The final sample sizes were 588 in 1953 and 584 in 1962. Slightly smaller base frequencies are used in the analysis because of missing data.

The questions used were identical both times, even when a certain wording was thought to yield responses of low reliability or validity. That is, every effort was taken to obtain comparable data of the same levels of reliability and validity.

The four sampling areas (communities) differ greatly in ecology and in agriculture. One is on top of the coastal escarpment and is a dairy area. Two have mixed economies corresponding to variations in altitude within each. Bananas constitute the main crop on the slopes, whereas the foothills or lowlands are mixed. The fourth is a coastal plain area and specializes in sugar cane and oranges. The distance of these areas from

in other sparsely settled countries.

In short, the problem of settlement and development of the Central Plateau of Brazil is one which requires a combination of government and private resources, long-range planning and people with the characteristics and skills suitable for the prevailing conditions. Absentee owners should be expected to contribute their share to the development of the roads, and other facilities for the region. Plans for development should begin with the characteristics of the region and the people who are attracted to it. The policy decisions then need to be made as to how much the Central Plateau should contribute to efficient agricultural production or to the relief of population pressures from other regions. The two roles are not entirely incompatible, but the priority given to each view will affect the nature of the program and plans for the development of the region.

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ARCHIBALD O. HALLER

The effects of economic growth on stratification is a topic of considerable interest to sociologists concerned with social change. The changes occurring in stratification systems are among the most pervasive influences in "transitional" societies. Except for a few recent articles, however, sociologists have published little on this subject.<sup>1</sup> This paper presents data regarding changes in stratification that have occurred in a rural area during a period of rapid economic growth in the region's urban center. The data refer only to objectives in *stratum* phenomena, not *class* interests or conflict.<sup>2</sup>

The paper assumes the existence of centers of economic growth whose influence radiates to peripheries.<sup>3</sup> Internationally, whole countries or even groups of countries are considered as such centers in relation to other countries.<sup>4</sup> Within a country, centres may be regions,<sup>5</sup> cities, or groups of nearby cities. For industrial nations the periphery includes the nonindustrial nations; for groups of cities in a region, it includes outlying regions and their cities; for cities, it includes the rural hinterland. A periphery usually supplies a center with agricultural and other raw materials, and it may serve as a market for manufactured goods.

Many western economic experts appear to believe that economic growth of a center is automatically beneficial to its periphery. In terms of stratification this would mean that economic growth in the center would produce a general enrichment of the surrounding rural area—a rise in real (monetary and nonmonetary) income of people from all social strata. In the extreme, this position may imply that the lower strata will contract as the middle and upper strata expand (this appeared to happen in the United States during the last half century).

On the other hand, some doubt that such enrichment necessarily occurs. There are at least three basic processes often believed to be more or less at odds with this position.

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2. *Impoverishment*, implying that at least those in some strata become increasingly poor.

one north, and two east of it. At both times the "county seats" were connected to Rio by paved roads and railways that were in daily use. The areas are suppliers of foodstuffs for the urban population and are consumers of goods manufactured in Rio, its satellite cities, or São Paulo, the second pole of Brazil's Rio-São Paulo industrial axis. Thus these areas are part of the meaningful periphery of the center.

*Statistical Generalization.* The logic of the research requires that we generalize to the entire peripheral region of the urban center of Rio de Janeiro. Obviously, data drawn from four widely scattered rural trade communities are much less than ideal for this purpose. For this paper I pooled the samples from the four areas, after first determining that the sociological differences among them were primarily due to occupation. My impression, shared by others who know the region, is that the pooled sample provides a fairly accurate base for estimating gross differences among the four major strata for most of the rural areas of the state of Rio de Janeiro to a distance of perhaps 150 to 200 kilometers from the center of the city. Because of the sampling technique, formal tests against the null hypotheses are not appropriate, and are not presented.

*The Independent Variable.* Though hard to measure precisely, the economic growth of the center between the sampling years of 1953 and 1962 was substantial. From 1953 to 1960, Brazil's gross domestic product appears to have grown at an overall rate of 6.1 percent per year, which is a per capita increase of 2.8 percent per year.<sup>10</sup> Most of this increase was in industry.<sup>11</sup> The per capita income of a state is a good index of its level of participation in the economic growth of the nation. In this regard the small state of Guanabara, which comprises most of the growth center of the city of Rio de Janeiro, had a far higher level than any other state in each year from 1950 to 1960. It varied around 300 percent of the natural average income.<sup>12</sup> Increases on this order no doubt continued through July 1962, when present data were collected.

*Occupational Strata.* For most purposes in this paper I have used a set of four strata. Three are fundamental agricultural strata: land owners, sharecroppers, and farm wage laborers. Some occupational categories appear to be closer to land owners than to either of the other two: these are renters and administrators of moderate to large farms. Renters and administrators were added together with the farm owners to form a stratum called "farm operators". This is a heterogeneous group ranging from owners of three hectares to a small number of owners of very large pieces of property; it includes people who control land owned by others. The sharecropper stratum is much more definite, consisting of those who live on someone else's property and work a portion of it in return for part of the proceeds and for the non-monetary benefits provided by the *patrões* (owner-patrons). The farm-wage-labor stratum is also relatively homogeneous. It consists of agricultural workers whose only source of income is outright sale of their labor to land owners. Unlike share-

from their *patrões*.

The fourth group is perhaps even more heterogeneous than the farm-operator stratum. It consists mostly of common labor in industry, sales, or services, together with a few owners of very small businesses, such as fruit stands, shoeshine stands, etc., and an even smaller percentage of managers and owners of industry, business, and services. In this region, farm operators tend to have a higher status than do the rural non-farm workers, who in turn have a higher status than do the sharecroppers; the farm wage laborers are lowest. (Data from the present project on income, access to services, etc., support this general belief. The sharpest break is between the non-agricultural workers and the sharecroppers.)

*The Dependent Variables.* *Proletarianization* is defined as a proportional increase in the number of proletarians in the sample. For this part of the analysis, I regrouped the sample to yield three strata: the proletariat, the employers, and the sub-proletariat. It is called here the "three-stratum" grouping as opposed to the basic four-stratum system. All common laborers in non-farm occupations belong to the proletarian group because they work for others and are paid in money. The farm-wage-labor group is also clearly proletarian by the same definition, as are farm managers. Farm owners and renters, owners of businesses and industry, or managers in industry, commerce, etc., are clearly not proletarians and are called the "employer stratum". A third stratum, the sharecroppers, are sub-proletarian. They might qualify as proletarians because they work for others, but since a great deal of their payment is in kind and other benefices provided by the *patrão* or landlord, they do not fully meet the definition of proletarian.

*Impoverishment-Enrichment* refers to changes in real income. Real income is defined here as access to valued goods and services. This implies that both monetary and non-monetary income should be used as operational measures of the variable. Monetary income was measured by the question "How much do you earn per month?"<sup>13</sup> In both 1953 and 1962 the monetary unit used was the *cruzeiro*. Responses given in time units other than months were pro-rated to a monthly base. There was considerable inflation during the nine years, and to standardize the inflationary effect, the Brazilian *cruzeiro* was stated in American dollars (at the free exchange rates) for the months of July 1953 and July 1962. At the earlier date, 43.28 *cruzeiros* was equal to one dollar and at the later date 366.86 *cruzeiros* was the dollar equivalent. The dollar inflation between the two periods was standardized against the consumer price indexes for the respective months. To yield roughly balanced marginals in both years, a monthly income of \$23 (actually \$23.08—or about \$275 per year) was used arbitrarily as a cutting point to divide the population into those having "high" versus "low" monetary incomes.

Non-monetary income was measured by several variables:

2. Education of the family head; those who had at least some formal schooling versus those who had none.
3. Literacy; those who reported they could read and write versus those who reported they could not.
4. Radio listening; those who reported they listened to at least some programs versus those who reported that they did not listen.
5. Cooperative membership; those who were and those who were not members.
6. Contact with agronomists or veterinarians; those who reported receiving at least one visit per year versus all others.
7. Whether or not the family sent the children to school.
8. Whether the family contacted a qualified doctor or pharmacist in the event of illness or accident.
9. Whether or not the wife went to the hospital to bear her children (persons without children were excluded).

Each person was classified as to whether he was "high" or "low" on each of the above indicators of monetary and non-monetary income. (Obviously, the cutting points between "high" and "low" are quite low when compared to richer regions of the world.) It was then possible to calculate for each date, 1953 or 1962, the percentage who were high in any one stratum or in the total group. If the percent high on a certain variable in 1962 exceeded the percent high on that variable in 1953, this was considered to be evidence of enrichment. If the percent low in 1962 exceeded that of 1953, this was considered evidence of impoverishment.

*Polarization-Equalization* is the last dependent variable. Polarization occurs when the distance between levels on a variable increases or when certain strata tend to gain a monopoly over a valued variable. Equalization is the opposite, where levels of a variable come together or where strata tend to approximate each other in levels of a valued variable. At both times there should be a positive association between occupational stratum and any other stratification variable. A tendency to polarize would be indicated by a *higher* positive association between occupational stratum and another stratification variable in 1962 than in 1953. A *lower* coefficient of association in 1962 would be evidence of equalization. We subtracted the coefficient of association measured in 1953 from that measured in 1962, and if the difference was positive, it indicated a tendency toward polarization. If the difference was negative, there was a tendency toward equalization. In this project the changes in the coefficients of association<sup>14</sup> of occupation with education, race, income, literacy, and land ownership were used as indicators of stratum polarization-equalization. Additional information is provided by the inter-associations of each of these stratification variables.

tions and size of the differences in coefficients of association in the two time periods. If, for example, a substantial number of the differences in coefficients of association were high and positive, we would conclude that polarization had in fact occurred. If substantial numbers of the differences in coefficients of association were high and negative, we would conclude that equalization had occurred. Finally, if most of the differences in correlation were very low, alternating almost evenly between positive and negative, we would conclude that there had been no change in the degree of polarization or equalization.

## Results

*Proletarianization.* The data on proletarianization are presented in two ways to show changes in the numerical composition of occupational strata between 1953 and 1962. (See Table 1.) The stratum names that are appropriate locally are not directly germane to the proletarianization hypothesis as it is usually conceived; for this reason, Section A shows the three-strata grouping and Section B the four-strata grouping. The operational definitions of stratum terms were given above under occupational strata. In effect, both Section A and Section B of the table tell exactly the same story. In the first, the "employer" stratum has changed very little. In the second, the farm operator stratum has changed very little between the two time periods. The big decrease is in the stratum called "sharecroppers" in Section B who are the same as those called "sub-proletariat" in Section A. This group decreased by 17 or 18 percent of the total sample population (the difference is due to rounding error in percentages). The great gainer is the proletariat stratum which moved up by 19 or 20 percent of the total population.

Proletarianization of regions such as this does not automatically imply a fall in status. If non-farm workers in fact constitute a higher stratum than the sharecroppers, the farm-wage laborers constitute a lower stratum (an assumption supported on the whole by evidence presented incidentally in Table 2) then the proletarianization of this population tends to involve a general rise in status even though some have fallen. Table 1 shows a substantial proletarianization of the population during the nine-year period.

*Impoverishment-Enrichment.* Data bearing on the impoverishment-enrichment issue are presented in Table 2. The left-hand column of the table presents the occupational strata and the change between 1962 and 1953 of percentage of variables indicating real income. The column headings are for income variables (these are defined above). Each cell has the possibility of three figures. The first is the percentage reporting a certain level of the income indicator in 1962; below that is the percentage reporting the same thing for 1953, followed by the difference between the two percentages, if it is greater than  $\pm$  five. Impoverishment-

enrichment is measured by the change figure in the bottom row of each cell. An indicator is considered to have changed appreciably only if the difference is greater than five percent.

Over half the cells indicate an appreciable change, and, in every instance but one, this change is positive. Six of the ten cells for farm operator show an increase between the two years. The same is true for the non-farm workers. For the sharecroppers, seven of the ten cells show an increase. Three of the ten cells for the farm-wage laborers show an increase and one shows a fairly substantial decrease. The decrease was in reported monetary income, which is perhaps the most important single variable. An appreciable change that occurred in the top three strata was toward the stratum-enrichment end of the variable rather than stratum impoverishment. The case is not so clear for the lower stratum (farm-wage laborers), where three non-monetary income variables showed an increase while monetary income showed a fairly substantial decrease.

The totals given in the bottom cells indicate that all the major measurable changes occurred in the direction of general enrichment.

The two probably most important income variables—monetary income and land ownership—show little or no measurable change. Other variables such as participating in co-ops, being visited by agronomists or veterinarians, consulting trained medical personnel, and having one's children born in the hospital show very little change, but all are positive. The most impressive changes are those non-monetary income variables that offer the possibility of increasing the individual's mastery over his environment through knowledge. Radio listening shows the largest gain of all, followed by sending one's children to school, reported literacy, and finally, reported formal education. Among various possible meanings of these data, one that stands out is the evidently increasing ties of the rural population to the total society through the wider horizons provided by radio and education.

We have seen that there tends to be a general enrichment and, for most variables, there is a tendency for stratum enrichment. Now, it will be recalled that there was a sharp increase in proletarianization, such that the sharecropper stratum lost membership, most of which was gained by the non-farm-worker stratum. We conclude from this that there has been a double gain in the real income of the population of the rural areas. It was brought on by the increase in non-monetary income coupled with the net shift of the population to higher strata. This observation should be tempered with the recognition that the farm-wage-laborer stratum has also increased slightly in numbers and the evidence for its enrichment is much less clear.

The general conclusion is that there has occurred a slight tendency toward an increase in non-monetary income which has provided a general enrichment as well as enrichment of at least three of the strata. There was almost no evidence of general or stratum impoverishment ex-

cept for the decrease in monetary income in the lowest stratum. The economic growth of Rio de Janeiro has resulted in a corresponding general and stratum enrichment in the rural periphery, and this enrichment tends to be in non-monetary income rather than monetary income, especially those factors probably measuring access to knowledge.

*Polarization-Equalization.* Data on this factor include the occupational stratum and the four other variables that appear to be the most important stratification criteria in the region: reported monthly income, education, literacy, and land-owning. All operational definitions for the variables are the same as in previous tables except monetary income, which was split into four categories instead of being dichotomized. The cutting points were set so as to yield approximately equal marginal totals in both years for all four levels of income.

Polarization occurs when high strata tend to gain a monopoly over the high levels of a stratification variable. Equalization is the opposite. Thus, polarization is indicated by a positive change in the amount of association between a pair of stratification variables, whereas equalization is indicated by a negative change.

The data regarding the polarization-equalization issue are presented in Table 3, an association matrix. It permits us to compare the  $\bar{C}$  values and the differences between them for each of the five major stratification variables. We report the difference figure only if  $\bar{C} \geq \pm .05$ .

There is no appreciable change between 1953 and 1962 in the degree of association between occupation and income or occupation and education. There is a slight tendency toward equalization in the relationship between occupation and literacy, and a fairly substantial tendency toward equalization in the relationship between occupation and land-owning. The data on polarization-equalization among the other factors (income, education, literacy and land-owning) show mixed results. There is neither polarization nor equalization in the relationship between income and education. There is a slight tendency toward equalization in the relationship between income and literacy and between income and land-owning. There is no change in polarization-equalization in the relationship between education and literacy. There is a moderate tendency toward polarization between education and land-owning, and a slight tendency toward polarization between literacy and land-owning.

There are altogether ten different pairs of possible polarization-equalization relationships. In four of these there is no evidence of an appreciable change in the factor. Four others show tendencies toward equalization, and the remaining two show tendencies toward polarization. Probably most important are the trends regarding occupational strata. These either show no change or a tendency toward equalization. Thus, present data provide little support for contentions that either polarization or equalization necessarily occurs in the periphery when a center is undergoing rapid economic growth.



This paper attempts to indicate some of the possible ways that rapid economic growth of a dynamic center may influence the stratification system of its rural periphery. One position would be that enrichment is a result, whereas another would be that impoverishment occurs. Some expect a proletarianization of the rural population and some expect polarization. Others expect "relative impoverishment". Those who would hypothesize that the supposed deleterious effects of rapid economic growth are to be felt most strongly by the lower strata also would be expected to hypothesize that such effects will be felt on the peripheral populations as wholes. If this is the case, the condition of the lower strata in the peripheral areas should surely be deteriorating: that is, that while proletarianization is occurring, impoverishment and polarization would also be occurring together.

The facts present a much more ambiguous picture. In the first place, a rapid proletarianization has occurred between 1953 and 1962. It consists primarily of a shift of people from a sub-proletarian stratum of sharecroppers to the stratum of non-farm workers living in rural areas, and secondarily, of a slight shift from the sub-proletariat to the stratum of farm-wage laborers. Next, there has been a slight but quite noticeable increase in levels of the variables we have used here to indicate non-monetary income for all strata and for the population as a whole. Finally, there is no defensible evidence of either polarization or equalization on an appreciable scale. This implies, too, that the so-called "relative impoverishment" hypothesis is untenable among strata in this region.

There is no way of knowing the extent to which these results are generalizable to other world regions. Indeed, the safest guess is that they are not. However, they do indicate the possibility that even in an underdeveloped area having a relatively rigid social structure, the rapid economic growth of a centre of industry and commerce can have substantial effects on the stratification in the surrounding rural area. These effects are not necessarily detrimental to the lower strata. At least in this case the lot of the lower strata improved.

#### FOOTNOTES

\* See Archibald O. Haller, "Urban Economic Growth and Changes in Rural Stratification: Rio de Janeiro, 1953-1962," *America Latina* 10:4 published 1967, for a more complete presentation of the research reported herein. The project was initiated by the late J. H. Kolb of the University of Wisconsin while he was in residence at the Rural University of Brazil. It has been financed by the *Conselho Nacional de Pesquisas*, the Organization of American States, the Educational Commission of the United States in Brazil, the Rural University of Brazil, the Office of International Programs of Michigan State University (East Lansing), and the Ibero-American Studies Program of the University of Wisconsin (Madison). It has profited from the support of João Gonçalves de Souza, Aurelio Rocha, Iderzio Luis Vianna, Romulo Cavina, Manoel Diegas Junior, João Bosco Gueddes Pinto, and the late F. E. Duarte.

1. See Wilbert E. Moore, "Developmental Change in Urban Industrial Societies," in Arthur Gallaher, Jr., ed., *Developmental Change* (Lexington: University of Kentucky Press; Torcuato S. DiTella, "Economía y Estructura Ocupacional en un País Subdesarrollado," *Desarrollo Económico* 1 (1961) pp. 123-153, esp. Figure 1, p. 132; and Glaucio A. D. Soares, "Economic Development and Class Structure," in Reinhard Bendix and Seymour Martin Lipset, *Class, Status and Power* (New York: The Free Press, rev. ed. 1966) pp. 190-199.

2. This paper follows Rolf Dahrendorf's terminology and is concerned with "stratum" as opposed to "class" phenomena. See his *Class and Class Conflict in Industrial Society* (Stanford, California: Stanford University Press, 1959), pp. 75-76.

3. For the seminal treatment of this issue see Raul Prebisch, *The Economic Development of Latin America and Its Principal Problems* (New York: United Nations Economic Commission for Latin America, 1950).

4. See, among others, Raul Prebisch, "Commercial Policy in the Underdeveloped Countries," *American Economic Review, Papers and Proceedings* (May, 1959), Vol. XLIX, No. 2, pp. 251-273.

5. In Brazil this type of analysis has been used by Celso Furtado. See esp. his *Formação Econômica do Brasil* (Rio de Janeiro: Editora Fundo de Cultura, 1959) esp. Chapt. 36.

6. Here we follow the definitions of Alfred Meusel in "Proletariat," *Encyclopedia of the Social Sciences*, (New York: MacMillan Company, 1933, reprinted September 1951) pp. 510-518. However, it should be noted that his definition is not accepted universally. Mills, for example, refers to those who sell their labor as a "class-in-itself" which has not yet become class-conscious. For him, class-conscious wageworkers are the proletariat (C. Wright Mills, *The Marxists*, New York, Dell Publishing Company, 1963, p. 83).

7. Some of the non-monetary benefits a sharecropper may, in feudal-like fashion, receive from his *patrão*, the landlord, are mentioned in Benno Galjart, "Class and Following in Rural Brazil," *America Latina* 7 (July-September 1964), pp. 3-24, esp. p. 5.

8. See Harry Schwartz, article in the *New York Times* (March 4, 1962), quoted in Gustavo Lagos, *International Stratification and Underdeveloped Countries* (Chapel Hill: University of North Carolina Press, 1963) p. 31.

9. Occupational strata have probably never been characterized by such a high degree of consensus that the exact stratum of each member of a social system could be ascertained immediately by any other member, except in rigidly controlled sub-systems such as armies. A certain amount of ambiguity of placement, perhaps more in some strata than others, is more common. For example, free men and slaves have unambiguous statuses *vis-à-vis* each other but there may be great differences among free men, or even among slaves. More germane, sharecroppers form a fairly well-defined stratum. So do landowners. So also do farm-wage laborers. Non-owners who control the use of land are somewhat more ambiguously categorized. Even among such strata as these, there can be a certain amount of confusion, however, because the same person may be a member of more than one stratum.

10. J. Gómez-Quiñones, *Statistical Abstract of Latin America* (Los Angeles: University of California Latin American Center, 1964) Table 65, p. 106.

Table 1  
PROLETARIANIZATION: Changes in Stratum Population

STRATUM	PERCENT		Change
	1953	1962	
<i>A. A Three-stratum Grouping</i>			
<i>Employers</i>	23	22	- 1
<i>Proletariat</i>	50	69	+ 19
<i>Sub-proletariat</i>	27	9	- 18
<i>B. A Four-stratum Grouping</i>			
<i>Farm Operators</i>	24	21	- 3
<i>Non-farm Workers</i>	23	38	+ 15
<i>Sharecroppers</i>	27	9	- 18
<i>Farm-Wage Laborers</i>	26	32	+ 6
<i>Total</i>	100 (582)	100 (576)	—

11. Stefan Koubek, *Brazil's Developing Northeast* (Washington, D.C.: The Brookings Institute, 1963).  
 12. *Ibid.*, Table 2.5, p. 36.  
 13. Obviously this question will not yield highly reliable responses. But the reliability should be about the same in both periods and comparability is the crucial issue here.  
 14. Thomas C. McCormack, *Elementary Social Statistics* (New York: McGraw-Hill Book Co., Inc., 1941) pp. 206-207.

Table 2  
IMPOVERISHMENT-ENRICHMENT: Changes in Percent Scoring "High" on Ten Indicators of Real Income

STRATUM	INCOME \$23 AND OVER	LAND OWNING — > .01 HECT.	FORMAL EDUCATION > ZERO	LITERATE: "CAN READ AND WRITE"	LISTENS TO RADIO	MEMBER OF CO-OP	VISITED BY AGRONO- MIST OR VETERINARY	SENDS CHILDREN TO SCHOOL	CONSULTS TRAINED MEDICAL PERSONNEL	CHILDREN BORN IN HOSPITAL
<i>Farm Operators</i>										
1962 (N = 121)	69	69	62	74	96	25	22	97	94	19
1953 (N = 141)	73	72	54	68	57	24	10	80	96	13
Change (>±05)	—	—	+08	+06	+39	—	+12	+17	—	+06
<i>Non-farm Workers</i>										
1962 (N = 218)	68	29	61	69	72	05	06	85	92	21
1953 (N = 134)	66	16	45	54	50	03	08	72	91	09
Change (>±05)	—	+13	+16	+15	+22	—	—	+13	—	+12
<i>Sharecroppers</i>										
1962 (N = 54)	31	07	30	44	86	06	06	91	81	13
1953 (N = 156)	23	00	20	32	40	06	01	80	85	05
Change (> 05)	+08	+07	+10	+12	+46	—	—	+11	—	+08
<i>Farm-Wage Laborers</i>										
1962 (N = 183)	19	10	33	45	88	02	04	69	83	09
1953 (N = 151)	38	12	31	32	71	04	01	53	83	08
Change (>±05)	-19	—	—	+13	+17	—	—	+16	—	—
<i>Total</i>										
1962 (N = 576)	48	30	49	60	83	08	08	84	89	16
1953 (N = 582)	48	25	36	48	53	10	05	69	88	09
Change (>±05)	—	—	+13	+12	+25	—	—	+15	—	+07



Table 3

*Polarization-Equalization: Differences in Degree of Association,  $\bar{C}$ , Between 1953 and 1962 for Five Stratification Variables<sup>a</sup>*

	Occupation	Monetary Income	Education	Literacy
<i>Monetary Income</i>				
$\bar{C}1962$	+.53			
$\bar{C}1953$	+.52			
<i>Difference</i>	—			
<i>Education</i>				
$\bar{C}1962$	+.37	+.44		
$\bar{C}1953$	+.35	+.42		
<i>Difference</i>	—	—		
<i>Literacy</i>				
$\bar{C}1962$	+.36	+.36	+.94	
$\bar{C}1953$	+.41	+.46	+.94	
<i>Difference</i>	— .05	— .10	—	
<i>Land-owning</i>				
$\bar{C}1962$	+.59	+.50	+.43	+.23
$\bar{C}1953$	+.76	+.55	+.27	+.14
<i>Difference</i>	— .17	— .05	+.16	+.09

<sup>a</sup>A difference in  $\bar{C}$  coefficients of associations between 1953 and 1962 is reported only if it was  $\geq \pm .05$ .