Editors' Note: Under ordinary circumstances, an author would have the right to respond to a reviewer after the essay had appeared in LARR. *In this case, the following review came in to us unsolicited. Given the nature of the reviewer's comments, we felt constrained to invite a reply from the author.*

FIGURES, FACTS AND FALLACIES: THE POPULATION OF COLONIAL VENEZUELA

PEOPLE AND PLACES IN COLONIAL VENEZUELA. By JOHN V. LOMBARDI. (Bloomington: Indiana University Press, 1976. Pp. 484. $25.00.)

The impressive contribution of population history to our understanding of the past has generated extraordinary interest in new demographic methods and old population figures. Most research in the field of late colonial Latin American demography, aside from the studies of Cook and Borah and a few others, has been aimed rather modestly at enhancing our understanding of the population dynamics of a village or small community.[1] This book may indicate a new trend: the attempt to establish the population structure of a large region by bringing together population reports for hundreds of parishes. Lombardi argues that through the development of a broad demographic context, analysis of the history of Venezuelan population can be most economically realized and the findings of micro-level studies properly interpreted.

This initial volume lays the groundwork for future studies and presents the massive database developed by the author. In addition to making these figures available to the public, he wishes to establish "a baseline" for the Bishopric of Caracas at the beginning of the nineteenth century, a "frame" from which proper samples may be drawn, and a "standard for the evaluation and analysis of the less consistent data available for earlier and later time periods" (p. xi). While these goals are noteworthy, the book will probably be ambivalently received within the academic community. Researchers who carefully study Lombardi's arguments will be rewarded. Nevertheless, as a demographic historian, I find the baseline insecure, his standards deficient, the published data unnecessarily abbreviated, and the quantitative arguments at times mistaken.

The book is divided in two parts: several essays in which the context and meaning of the parish reports are elaborated, and some three hundred pages of data. A brief description of the dataset is necessary before discussing the arguments developed in the text. In part two we find in a set of seven tables an extraordinary listing of over two thousand selected reports from some two hundred parishes of the Bishopric of Caracas during the period 1771–1838. Lombardi informs us that even more reports exist but are not included because they contain internal inconsistencies or their formats make them incompatible with this set. The tables present the figures, ordered by parish and date, in a uniform

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format, with each line representing a single return and indicating reported counts and generated statistics for specific racial and religious categories. Few parishes are represented by less than five reports and several by more than twenty. Over seventeen hundred returns cluster in the short space of only two decades—immediately prior to and during the wars for independence—with some 9 percent dated before 1800 and 8 percent after 1819.[2] This fortuitous chronological spread will immediately spark the interest of historians studying the demographic and social impact of the independence struggles.

Table 1 spreads out the total population counts by race and sex, parish-by-parish, return-by-return. In table 2, the corresponding information for the child population (*párvulos*) is listed. Table 3 indicates for each racial group the adult population and proportion of adults married. Unfortunately, sex-specific totals are not presented; consequently, anyone wishing to study the single or married population by sex or race—material contained in the originals—will find it impossible with the published data.[3] In tables 4 and 5, over one hundred pages of computer generated indicators are presented: sex ratios of adults and children by race, and the relative distribution of the population by race. The remaining tables report the number of ecclesiastics in each parish and the annual distribution of reports.The layout of the material may appear pleasing to some tastes, but quantifiers wishing to work with these tables will be annoyed by the flipping back-and-forth required, for example, to derive the adult population by sex, which can be done only by subtracting the entries in table 2 from those in table 1. With a listing of the computer file by columns, rather than by rows, all the original figures for each report could have been displayed conveniently in a single column and at the same time this arrangement would comply with one of the basic injunctions of this type of enterprise, namely, to reproduce the original material as fully as possible. Likewise, one must lament the author's decision to omit the name, initials, or other identifier of the priest responsible for each report. This bit of information may prove valuable for interpreting the pattern of recurrent figures present in many returns.

In part one, Lombardi develops the spatial, chronological, and record-keeping context of the reports; analyzes the population counts for regions and types of settlements; and explores the potential contribution of these documents for micro-studies. A series of fourteen neatly drawn toponymic maps (scales approximately 1:50,000—1:100,000 with greater detail shown through insets) display all the parishes, villages, towns, and cities mentioned in the study. The brief survey of Venezuelan regional geography will be particularly welcomed by those unfamiliar with the area, notwithstanding the paucity of surface features depicted on the maps. Anyone faced with the task of tracking down the location of colonial Venezuelan parishes will find these charts very helpful. Lombardi's extraordinarily detailed indices and cross-references make the task even easier. Following a brief but thorough description of the types of population data available for this period. Lombardi introduces the principal exhibit, ''Type III Censuses,'' that is, reports indicating the number of parishioners by sex, race, and marital status (child, single, and married). His discussion of these terms is generally cautious and convincing. For each concept, he attempts to use the

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language of that era to decipher the meaning of the categories for contemporary demographic analysis.

A fundamental context that is not elaborated at this point and is only sporadically dealt with elsewhere is the question of the quality of the reports. He estimates that perhaps 10 percent of the population of the Bishopric is not represented because the returns have not yet been located. Moreover, he reasons that the reports must favor "the prosperous, the white, the adult, the residentially stable, those living in major population centers and those living in towns" (p. 59). To test the aggregated reports' coherence, sex and child-woman ratios for the Bishopric are compared with those from a model stable population. Given the necessarily gross assumptions that must be made in selecting a stable population, Lombardi wisely does not place much confidence in the results. Moreover, all the model ratios are erroneously calculated.[4] The purpose of this kind of exercise should be to quantitatively assess enumeration quality, but, in the end, error is indistinguishable from sex and age-specific demographic phenomena, such as migration. Resorting to model tables adds a scientific aura to the inquiry but obscures the fact that the dilemma is resolved through one's assumptions.

What other kinds of tests should be applied? Traditional historical and demographic checks are essential. The reliability of this kind of data must be assessed empirically rather than hypothetically, by checking where possible reports against other sources. Returns must reflect both a numerical and demographic logic. As one might suspect, many reports are qualitative judgments, guesses, expressed in quantitative form. Twenty-five of 250 figures for San Pablo parish (Caracas) from 1806 through 1818 are evenly divisible by one-hundred; another seventy-one by ten (pp. 185, 239, 293). In the returns for El Sombrero the child population figures increase by exactly five for each race and sex group from one year to the next; then these arbitrarily adjusted figures are repeated in the subsequent report. Santa Rosa de Lima parish stretches a curious pattern of repeated figures over twenty-one years. In Camatagua four of eight returns are almost identical. Caraya has five identical reports, and a sixth begins the same only to change midway through the report. Generally repeated returns occur most frequently precisely in the period considered "best" by Lombardi, 1800–1809 (p. 110). Surprisingly, he neglects to warn readers about these curious features, in regard to type III censuses. These illustrations demonstrate the wide margin of error in this material. At the micro-level these debilities are readily apparent to the researcher; at the macro-level, the repetitions, arbitrary updates, jumps, and slumps are obscured. What do aggregated sums, averages, percentages, and ratios, which form the basis for several chapters in part one, mean?

One may argue that the parish priest probably knew the population process of his community better than anyone else. As population changes occurred, adjustments in the annual reports may have been made to indicate direction of change, although it is very unlikely that absolute magnitudes could have been reliably estimated without an actual recount. Perhaps the priest of El Sombrero added five children to each count to indicate that the child population was

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growing the same for all groups, although arithmetical rates range from 1 to 20 percent for the various groups. Thousands of numbers generated by a simple computer program from these data may help one find neither demographic realities nor suggestive hypotheses, but instead simply a field of ciphers. Where research demonstrates that particular reports are derived from counts of parishioners—or at least that the returns do not bear the marks of a guess—it may be expedient to use customary demographic measures to analyze data quality and substantive relationships. Otherwise, we should recognize that we may be dealing with attitudes about population relationships and that ordinary rules of arithmetic may be inapplicable. Statisticians posit four levels of measurement—nominal, ordinal, interval, and ratio—and have developed elaborate measures appropriate to each. This concept may prove useful in working with population reports based on guesses.

The importance of using additional sources, traditional historical reasoning, and careful procedures to assay this type of data can be best illustrated by the example of Caracas. Here Lombardi briefly confronts his figures with those given by travelers. Giovanni Codazzi's estimate of forty to fifty thousand inhabitants in 1810 is dismissed apparently because of an insinuated proneness to exaggerate. Other writers' guesses are described as too high because they refer to the entire valley instead of the seven parishes of the city proper. Lombardi concludes "in any case, the estimate of 24,000 for Caracas in the period 1800–1809 would seem at present as close to reality as possible, until we have some microhistory to guide us" (p. 62). Remarkably, sums for years in which all the Caracas parishes are represented by reports produce 31,560 for 1805 and 30,096 for 1811. Lombardi's average-of-returns method apparently yields 31,162 for 1800–1809.[5] To the extent that the reports are based on actual enumerations—note that some of the figures for 1811 appear to have been rounded but almost all are unique at both dates—everyone would agree that the reported totals must be minimal, therefore subject to upward revision. Some might accept Codazzi's range as the proper order of magnitude. If the reports are guesses, the degree, or even the direction, of adjustment can be estimated with little confidence.

The facts and fallacies that can be teased from these figures is demonstrated by Lombardi's micro-study of the population history of San Carlos de Austrias, 1781–1824 (pp. 97–108). No analysis of the reports' shortcomings is made in the text, nor are there comments about repeated figures for this parish (see p. 321). Four principal hypotheses are developed: the war produced a loss of population, a relative decline in white population, a proportional increase in blacks, and a marked symmetry of movement for males and females and for children and adults. In a flurry of statistical displays (eleven full-page charts), Lombardi graphs time series of the reported population, transforms the raw figures into logs, plots the data, and calculates regression and correlation coefficients. To the extent that one accepts the reports as approximately correct, the support for these hypotheses is impressive. Whether the figures are counts or guesses, the logic of ordinal measurement, i.e., the magnitude of change, supports these relational propositions. However, much of the statistical paraphernalia creates an unwarranted aura of statistical exactitude. The regression analysis is

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an unabashed example of quantitative overkill. The time series charts make the changes much more readily apparent than the scatterplots. The summarizing qualities of the plots and coefficients obscure the relationships rather than clarify them. Finally, the conclusion that husbands and wives entered and left the parish in similar numbers seems circular. The reports may reflect not what we understand as demographic residence, but rather the priests' attitudes about the residence of parishioners. The displays demonstrate that the reported change for the white married population of both sexes is not only highly correlated, as Lombardi argues, but that for the first twenty years they are identical with one exception. The pattern of "movement" for married pardos duplicates that of the whites. At this point (pp. 100–104), Lombardi seems to disregard earlier conclusions about the meaning of residence (pp. 39, 41). If comments on the documents themselves indicate that the priests made every effort to report the same number of spouses for each sex, should we be surprised when the figures change in tandem? Moreover, the graphs indicate that exactly coincidental with the Independence struggles, priests began to report unequal numbers of spouses for each race.[6]

Parish reports for the late colonial era may be very useful documents, whether particular returns are simple guesses or careful enumerations. The overriding difficulty is to distinguish the two, develop appropriate methodologies for each, and proceed to decipher their meanings. In the process we should not allow the superficial specificity of numbers to mislead us. Since it is likely that the factual basis of many of the figures contained in these reports will never be demonstrated, they should be used cautiously, with an informed appreciation of their errors, biases, reliability, and measurement level. By bringing together this material and elucidating its spatial and bureaucratic context, Lombardi assists further research. Unfortunately this substantial contribution is lessened by computational excesses and mistakes, which may confound investigation in this field.

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ROBERT MCCAA
University of Minnesota

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NOTES

1. Sherburne F. Cook and Woodrow Borah, *Essays in Population History: Mexico and the Caribbean*, 2 vols. (Berkeley: University of California Press, 1971; 1974). For an exhaustive bibliography see Nicolás Sanchez-Albornoz, *The Population of Latin America: A History* (Berkeley: University of California Press, 1974), pp. 263–86.
2. Lombardi inexplicably reports the distribution as "about 20," "35," "33," and "some 15" percent for the periods 1771–1800, 1800–1809, 1810–1819, and 1820–38, respectively (pp. 40–41). The corresponding distributions calculated from the data on page 468 yields 9.1, 52.1, 30.4, and 8.4 percent
3. If sex-specific data had been reported for either single or married adults, all the original data could have been derived by subtraction. With the information published here, one can hardly go beyond the partial data and transformations made available by the author.
4. Lombardi fails to choose a realistic model population, adjust the sex ratio at birth, and translate "párvulos" into the stated chronological age group. The following table

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permits the comparison of his figures with more likely model population ratios—rate of natural increase of 1 percent instead of zero, sex ratio at birth of 105 males per 100 females, and age groups 0–6 and 0–9 years.

Category	Sex Ratio			Child-Woman Ratio		
					Children	
	párvulos	*0–9*	*10+*	*párvulos*	*0–6*	*0–9*
Bishopric data (p. 134)	99.5		88.4	.73		
Stationary values (p. 134ff)		98.1	98.7			.58
Correct stationary values		103.1	103.7		.40	.59
Stable population RNI = 1%		103.1	104.1		.54	.79

     For method of calculation see Ansley J. Coale and Paul Demeny, *Regional Model Life Tables and Stable Populations* (Princeton: Princeton University Press, 1966), p. 40. Following Lombardi's procedure, I calculated stable population values using Model South, level 3, female life expectancy at birth of twenty-five years (Coale and Demeny, pp. 684, 780). Stable population at ages five and six were approximated by simple linear interpolation. Notwithstanding the unambiguous labels of table A–10 and elsewhere (Lombardi, pp. 77, 78, 137), which indicate that computations are based on ages zero through six years, the stable ratios seem to be calculated with 0–9 years. The term "párvulo" probably had social and religious dimensions as well as a chronological one, reflecting parents' and priests' enthusiasm for religious responsibilities as well as elapsed birthdays. The extraordinary frailty of this kind of test is readily apparent. The model must be selected with little knowledge of the true mortality level, natural growth rate, or departures from stability. Child-woman ratios are particularly ill-suited as a test because tiny variations in the hypothesized growth rate produce large variations in the ratio.

5.   Lombardi calculated the population for each parish in the period 1800–1809 by taking a simple average of all returns reported for the parish during that decade; the figures were then summed to produce Bishopric totals. This procedure assigns greater weight to repeated returns.

6.   It is impossible to determine the frequency of the sex correspondence pattern for married groups from the published dataset because the information is omitted. Figures 5–4 and 5–8 clearly show that there are two distinct patterns, one before 1810 in which the movement of married husbands is identical to that of married wives and one after 1810 in which changes are proportional but not identical. In figure 5–11, the summary statistics create a more serious distortion. This is a classic example of a statistical model ill-suited to the empirical information. Two outliers have an overwhelming effect on the regression and correlation coefficients. For a discussion of this phenomenon, heteroscedasticity, see John H. Mueller, Karl F. Schuessler, and Herbert L. Costner, *Statistical Reasoning in Sociology* (Boston: Houghton Miflin, 1970), p. 301. The omission of note six and contradictory labels for figure 5–7 may further confuse the reader.

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