STRONG RESERVATIONS ABOUT "NEW INSIGHTS INTO THE DEMOGRAPHICS OF THE PARAGUAYAN WAR"

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In the first issue of 1999 of this journal, Thomas Whigham and Barbara Potthast published a research note on the demographics of the Paraguayan War (1864–1870). They reported a newly discovered census from 1870, presented an analysis of the census results, and concluded that the old stories of a steep loss of population during the war are basically correct. The census data showed that Paraguay's total population in 1870–1872 had declined to 116,351 persons (see table 1). Because several villages had failed to report to the Asunción authorities, Whigham and Potthast adjusted the census. They assumed that 25,000 to 50,000 Paraguayans remained in these areas, making the total population somewhere between 141,351 and 166,351. They concluded that even after making these additions, the loss would seem to be 60 to 69 percent of the Paraguayan population before the war.

When I started reading this piece, I was glad that new census materials had been discovered and that new insights had become available because the new information would help me in revising a section of my forthcoming work entitled "Paraguay, 1515–1870: A Thematic Geography of Its Development."[1] But after reading the entire research note, I had major reservations and felt somewhat disappointed.

Whigham and Potthast have invested much energy in correcting the 1870 census data by adding missing figures, but they hardly raised the question of whether the available data are sufficiently reliable. In my opinion, they overestimate the reliability of their figures. My reservations are based on three arguments.

First, all "censuses" taken in Paraguay in the eighteenth and nine-

1. To be published jointly in late 2002 by the Ibero-Amerikanisches Institut (Berlin), Iberoamericana (Madrid), and Vervuert (Frankfurt).

TABLE 1 Paraguayan Population, 1870–1872, according to Whigham and Potthast

	Males		*Females*		*Totals*	
Age Category	*N*	*(%)*	*N*	*(%)*	*N*	*(%)*
Older persons	4,505	(13.2)	11,585	(16.4)	16,090	(15.4)
Adults	9,761	(28.7)	39,412	(55.9)	49,173	(47.0)
Children	19,785	(58.1)	19,549	(27.7)	39,334	(37.6)
Totals	34,051	(100.0)	70,546	(100.0)	104,597	(100.0)
Unspecified females			678		678	
Unspecified males and females					11,076	
Totals	34,051		71,224		116,351	

Sources: Whigham and Potthast (1999, 184–85); percentages added.

teenth centuries were characterized by undercounting. Whigham and Potthast are aware of this fact, which they illustrate in mentioning several weak points of the 1846 census, including the undercounting of children. To cite another example, José Jacquet, the statistician responsible for the census of 1886, knew that a lot of people had been omitted, certainly in the inaccessible areas of the countryside. He therefore immediately increased the 1886 census figure of 239,774 inhabitants by 10 percent. In 1887, however, he decided that this correction was still too low, and he increased the original 1886 figures by 37.5 percent. Jacquet's second correction brought the population up to 329,645 in 1887 (excluding Indians in the north and west of the country).[2] The 1846 and 1886 censuses were held under normal political and economic conditions, but the same cannot be said of the census organized by the Gobierno Provisional at the end of 1870. At that time, Paraguay was a thoroughly damaged and disorganized country, where it must have been difficult for the remaining or newly appointed *jefes políticos* to get a clear idea of the population in their *partidos* (districts). Moreover, they had to cope with many serious postwar problems and may not have paid sufficient attention to the request to provide the Provisional Government with exact population figures, all the more so because the primary purpose of the 1870 census was to provide information about areas under cultivation. It is strange

2. See Kleinpenning (1992, 475). An indication of the unreliability of the uncorrected 1886 figure is that according to Behm and Wagner, Paraguay had 293,844 inhabitants in 1876 (Behm and Wagner 1880, 85). Because they added no further details, I assume that this figure has been calculated.

that Whigham and Potthast did not address the question of whether the data available in the 1870 census are truly reliable.

It is also unfortunate that the authors have not used population figures that became available shortly after the war and were published in *Die Bevölkerung der Erde*, edited by E. Behm and H. Wagner. In the 1874 edition of this series, Behm and Wagner mentioned that the *Buenos Aires Standard* had placed the Paraguayan population at 231,996 persons, which they considered a reliable figure. The newspaper added that Asunción had a population of 17,890 persons at that time (Behm and Wagner 1874, 78). The latter figure is used by Whigham and Potthast to make the 1870 census results more complete. According to Vera Blinn Reber, the figure of 231,996 is also mentioned in a report made at the end of 1872 to the British Foreign Office (Reber 1988, 298).

Much more interesting is the population mentioned in the 1875 edition of Behm's and Wagner's work (1875, 119). In that edition, they reported that on 1 January 1873, a population census had been held in Paraguay and officially confirmed that the war and disease had decimated the country's population. According to this census, Paraguay had a population of 221,079. Behm and Wagner also provided information about the composition of the population (see table 2). Keith Johnston, who mentioned the same figures, said that they were ostensibly based on a census:

> The only way in which such a census could have been easily made in the country would have been by obtaining returns from each department, collected therein by its "*gefe*" or chief: it is strange, therefore, that though I constantly sought information as to population from the "gefes," not one of them ever mentioned this census, though they were able to give approximately the number of people in their department. The only approach to a census that I heard of in any district was a numbering of the inhabited houses in the department of San Cosme, which took place in 1871. I may be mistaken, but the very minuteness of this census of 1873 leads me to doubt it, although the general idea it gives of the proportion of the sexes, according to age, seems to be correct. (Johnston 1875, 344)

In my opinion, Johnston's conclusion regarding the age and sex structure is important and an initial reason to take the figures seriously, even though they are of a general nature. Behm and Wagner did not cite simple round figures for the total population, which would have made it almost inevitable to conclude that the figures are nothing more than a rough estimate made in the offices of Asunción. Instead, they provided details that could only be obtained by counts or estimates at the level of the partidos. If one compares the percentages about age structure in 1873 with those that were calculated on the basis of the 1870 figures provided by Whigham and Potthast, a striking similarity can be observed: children represented 37.6 and 38.9 percent of the population in 1870 and 1873, respectively, while those fifteen and older represented 62.4 and 61 percent in these years. This finding is another reason to consider the 1873 data reliable and to assume that it too was based on a census. Unfortunately, Johnston did not give all the de-

TABLE 2 Paraguayan Population in 1873 according to Behm and Wagner

	Males		*Females*		*Totals*	
Age Category	*N*	*(%)*	*N*	*(%)*	*N*	*(%)*
Under 14 years	39,507	(57.9)	46,572	(30.5)	86,079	(38.9)
15 to 24 years	15,083	(22.1)	45,576	(29.8)	60,659	(27.4)
25 years and older	13,663	(20.0)	60,678	(39.7)	74,341	(33.6)
Totals	68,253	(100.0)	152,826	(100.0)	221,079	(99.9)

Sources: Behm and Wagner (1875, 119). See also Johnston (1875, 344), who gives a total population of 221,070; and Kleinpenning (1992, 474). Percentages added.

tails available in Behm and Wagner. They specified a census held on 1 January 1873 and also related the source of their information: a communication sent by Consul J. Duesberg to the *Redaction des Gothaer Almanachs* (Behm and Wagner 1875, 119). It may be assumed that the consul was well informed about the decision of the Paraguayan government to hold a census, must have had access to first-hand official information about its results, and had no reason to provide the *Almanach* with worthless data. This is a third reason to take the 1873 figures seriously. A fourth argument might be that the 1873 census was held when the situation in Paraguay had become less chaotic than in 1870. One may even speculate that the government decided to organize a better census in 1873 after concluding that the 1870 situation was too confused and the earlier census results were therefore too fragmentary and unreliable.

Taking all these arguments into account, I find no convincing reason to consider the 1873 data to be "invented" and therefore worthless. I even consider the 1873 data more reliable than those of 1870–1872. This preference does not imply, however, that the 1873 results are completely correct. Because of undercounting, the population probably was not 221,079 but somewhere between 221,000 and 230,000.

Finally, a third major argument raises doubts about the reliability of the 1870 census, which is that the figures conflict with those of later censuses. If it is accurate that Paraguay's population amounted to only 141,000 to 166,000 in 1870–1872, as Whigham and Potthast assume, the census of 1886 could never have yielded a total of 239,774 (the low uncorrected figure) or 329,645 persons (after correction by 37.5 percent). With an annual growth rate of 3 percent, a population doubles in less than twenty-five years; with a growth rate of 2 percent, it doubles in less than forty years. An annual growth rate of 3 percent seems unrealistic because of the high mortality rate (including infant mortality) of that era. The Paraguayan population probably grew by about 2 percent per year after 1870. If we accept the population figure as calculated by Whigham and Potthast for 1870–1872 (141,351 to 166,351) and a 2 percent growth rate, then Paraguay would not have had

TABLE 3 Possible Paraguayan Population Losses during the War of the Triple Alliance (1864–1870)

Population on 1–1-1873	*Population in 1864*	*War Losses N (%)*	*Source of 1864 Figure*
221,079	388,511 to 456,979	167,432 to 235,900 (43.1% to 51.6%)	Whigham and Potthast
221,079	420,000 to 450,000	198,921 to 228,921 (47.4% to 50.9%)	Whigham and Potthast
221,079	291,605 to 318,114	70,526 to 97,035 (24.2% to 30.5%)	Reber

Sources: Whigham and Potthast (1999, 179); and Reber (1988, 305).

a population of 283,000 to 333,000 until 1910. In reality, it achieved that population in 1887, after about seventeen years. This fact does not mean that analysts should accept a much higher annual growth rate (even 3 percent would then still be too low). It means that the population in 1870 must have been considerably larger. On the basis of the census of 1899 (which seems reasonably reliable) and an annual growth rate of 1.8 to 2.2 percent from 1870 to 1899, Reber calculated that Paraguay's population in 1870 might have been between 261,069 and 292,514 persons (Reber 1988, 299). These figures are more or less in line with the (uncorrected) total of 221,079 mentioned by Behm and Wagner and by Johnston for the beginning of 1873. In other words, even the maximum of 166,351 calculated by Whigham and Potthast is too low.

To conclude, it appears that Whigham and Potthast have too readily considered the 1870 census results reliable data, enthusiastic as they were about having found a new source of information on Paraguay's postwar population. They have paid too little attention to other postwar figures and to the work of Reber. It seems more realistic to assume that the population at the beginning of 1873 totaled between 221,079 and 230,000 persons. I hope that my reservations will stimulate Whigham and Potthast or other researchers to continue their investigations in order to find other and hopefully more precious "Rosetta stones." If the archives contained undiscovered data for 1870, why not also materials in Paraguay or Argentina concerning the census of 1873?

On the basis of the 1873 figures, what can be said at present about the population losses during the war? The answer depends on the population figure for 1864, which has to be calculated because no census was held at that time. Table 3 summarizes some alternatives. Because Whigham and Potthast have made a serious attempt to correct the results of the 1846 census and the annual growth rate they assume seems to be realistic, I am inclined to take their 1864 figures as the basis. In that case, population losses due to the war rank between 43.1 and 51.6 percent. This range is less than

the 60 to 69 percent suggested but still perfectly in line with what always has been said: when the War of the Triple Alliance ended, Paraguay had lost about half of its population. The losses were, in my opinion, somewhat less dramatic than Whigham and Potthast calculated. Yet this interpretation remains a sad one. The most optimistic conclusion that can be drawn, using Reber's figure, is that at least a quarter of the Paraguayan population was lost.

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