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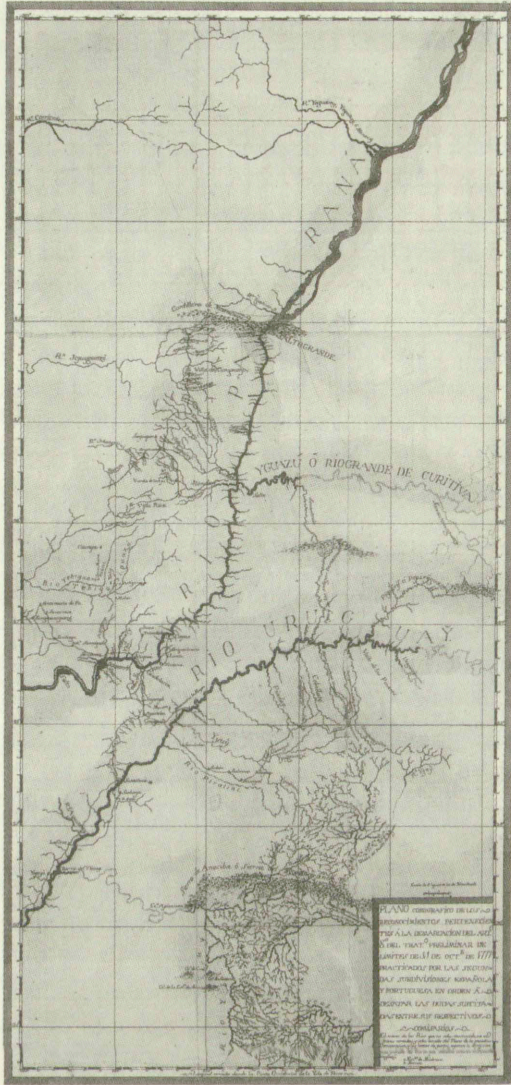
Robert H. Jackson

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Plano corográfico de los reconocimientos pertenecientes a la demarcación del Art. 8. del Trato. Preliminar de Limites de 11 de octe. de 1777 practicados por las segundas subdivisiones española y portuguesa en orden a desatar las dudas suscitadas entre sus respectivos comisarios. Library of Congress, Geography and Map Division, Washington, D.C.

Demographic Patterns in the Jesuit Missions of the Río de la Plata Region: The Case of Corpus Christi Mission, 1622-1802

ROBERT H. JACKSON

In recent years, scholars have undertaken studies of the consequences of European colonization on discrete native populations in the Americas. In particular, there have been significant advances in the study of the missions established on the fringes of Spanish colonial territory, such as in the area of socio-cultural history.¹ One aspect of Spanish frontier mission history that has not been adequately studied, however, is demographic patterns, particularly in light of recent advances in the study of historic populations, methods, sources, and comparative approaches.²

¹ See, for example, Arno Alvarez Kern, ed., *Arqueología histórica misionera* (Pôrto Alegre: EDIPUCRS, 1998); Barbara Ganson, *The Guaraní under Spanish Rule in the Río de la Plata* (Stanford: Stanford University Press, 2003); Rafael Carbonell de Masy, *Estrategias de desarrollo rural en los pueblos guaraníes, 1609-1767* (Barcelona: Instituto de Cooperación Iberoamericana, 1992); and Moacyr Flores, *Reduções jesuíticas dos guaranis* (Pôrto Alegre: EDIPUCRS, 1997).

² Several studies provide an overview of system-wide demographic patterns and trends. They include Carbonell de Masy, *Estrategias de desarrollo rural*; Ernesto Maeder, "La población de las misiones de guaraníes, 1641-1682: reubicación de los pueblos y consecuencias demográficas," *Estudios Ibero-Americanos* 15:1 (1989):49-80; Ernesto Maeder, "Fuentes jesuíticas de información demográfica misional para los siglos XVII y XVIII," in *Fuentes útiles para los estudios de la población americana: Simposio del 49º Congreso Internacional de Americanistas, Quito, 1997*, ed. Dora Celton (Quito: Abya-Yala, 1997), 45-57; Daniel T. Reff, "The Jesuit Mission Frontier in Comparative Perspective: The Reductions of the Río de la Plata and the Missions of Northwestern Mexico, 1588-1700," in *Contested Ground: Comparative Frontiers on the Northern and Southern Edges of the Spanish Empire*, ed. Donna Guy and Thomas Sheridan (Tucson: University of Arizona Press, 1998), 16-31; Massimo Livi Bacci and Ernesto Maeder, "The Missions of Paraguay: The Demography of an Experiment," *Journal of Interdisciplinary History* 35:2 (2004):185-224; Robert H. Jackson, "Missões nas fronteiras da América espanhola: análise comparativa," *Estudios Ibero-Americanos* 24:2 (2003):51-78; Robert H. Jackson, "Mortality Crises in the Jesuit Missions of Paraguay, 1730-1740," *World History Review* 1:2 (2004):2-23; Robert H. Jackson, "Una mirada a los patrones demográficos de las misiones jesuíticas de Paraguay," *Fronteras de la Historia* 9 (2004):129-78; and Robert H. Jackson, *Missions and Frontiers of Spanish America: A Comparative Study of the Impact of Environmental,*

This case study of demographic patterns in the Jesuit mission of Corpus Christi, located in modern Argentina on the east bank of the Paraná River, calls into question certain well-established assumptions about post-contact native demographic patterns in the Americas, particularly about the levels of population decline and the belief that native people gradually built up immunity over several hundred years of exposure to diseases such as smallpox (see Map 1). Identifying patterns of population growth and mortality, and examining the age and gender structure, are all key to this analysis, as are discussion of issues related to available sources and their interpretation and the question of available medical treatments for highly contagious crowd diseases, such as smallpox, that killed thousands of natives living in the missions.

Henry Dobyns laid out a general model of native demographic patterns following sustained contact with Europeans in several publications, particularly a 1983 book titled *Their Number Become Thinned: Native American Population Dynamics in Eastern North America*.³ According to Dobyns' construct, waves of epidemics spread through the Americas, literally killing millions of natives and greatly reducing the native populations over a period of several centuries after 1492. There is no question that epidemics followed European conquest and settlement in the Americas and that native populations experienced declines. Moreover, the "high counters" in what can be called the "numbers game," the construction of contact population estimates and epidemic chronologies, have provided an important corrective to an earlier view that argued that the native populations in the Americas had

Economic, Political, and Socio-Cultural Variations on the Missions in the Río de la Plata Region and on the Northern Frontier of New Spain (Scottsdale: Pentacle Press, 2005), especially Chap. 5.

³ Henry Dobyns, *Their Number Become Thinned: Native American Population Dynamics in Eastern North America* (Knoxville: University of Tennessee Press in cooperation with the Newberry Library Center for the History of the American Indian, 1983). Other scholars contributing to the same general interpretation of post-contact native demographic patterns include Noble David Cook, who has published several influential studies including *Demographic Collapse: Indian Peru, 1520-1620* (Cambridge: Cambridge University Press, 1981); and *Born to Die: Disease and New World Conquest, 1492-1650* (Cambridge: Cambridge University Press, 1998). The earlier works of Sherburne Friend Cook and Woodrow Wilson Borah were also influential in the development of the model. Their decades of research culminated in a three-volume collection titled *Essays in Population History: Mexico and the Caribbean* (Berkeley: University of California Press, 1971-1979).

Map 1



Section of a 1780s map of the Paraguay region, showing the location of Corpus Christi and other ex-missions in the Paraná-Uruguay River region. Plano corográfico de los reconocimientos pertenecientes a la demarcación del Art. 8. del Trato. Preliminar de Limites de 11 de octe. de 1777 practicados por las segundas subdivisiones española y portuguesa en orden a desatar las dudas suscitadas entre sus respectivos comisarios. Library of Congress, Geography and Map Division, Washington, D.C.

not been large to begin with, and by implication, were not as sophisticated as contemporary European populations.⁴

This view of almost continuous population decline caused primarily by recurring epidemics is plausible, but there are weaknesses in the model, as shown by the case of the Jesuit missions of Paraguay. Moreover, important parallels and insights regarding both the general patterns and the specific case study of the Paraguay missions can be gained from contemporary European demographic patterns during the early modern period. Yet a discussion of European patterns rarely enters the debate regarding native demographic trends in the New World after 1492. Detailed demographic studies of Europe show that in nonepidemic years infant and child mortality rates were high and that periodic epidemics culled the populations. Major epidemics slowed or stalled growth, but, from the sixteenth to early nineteenth centuries, European populations still grew at slow to moderate rates. Major epidemic outbreaks generally occurred about once a generation, when the number of potential susceptible people born since the previous outbreak reached a threshold to sustain the chain of infection.⁵ Epidemics generally spread with the movement of people engaged in trade or war or in populations in distress because of famine resulting from crop failure.⁶

A detailed study of epidemics and demographic patterns in the Paraguay missions, viewed also within the context of contemporary European patterns, corrects and modifies the general model outlined by Dobyns and others.⁷ Native populations declined, but, at the same time, regional variations in morbidity and mortality also need to be taken into account, as well as more detailed analysis of epidemic mortality,

⁴ Angel Rosenblat, "El desarrollo de la población indígena de América," *Tierra Firme* 1:1 (1935):115-34.

⁵ Michael W. Flinn, *The European Demographic System, 1500-1820* (Baltimore: Johns Hopkins University Press, 1981), 38-39.

⁶ In a detailed study of a famine in Darfur, Sudan, Alexander de Waal showed that the relationship between famine and epidemics resulted from the movement of peoples in search of relief spreading contagion. Alexander de Waal, *Famine that Kills: Darfur, Sudan* (Oxford: Oxford University Press, 2005). De Waal's study of a historic famine corrected an earlier view that suggested that famine victims were prone to disease caused by a weakening of their immunological systems resulting from malnutrition.

⁷ Dobyns, *Their Number Become Thinned*; Robert McCaa, "Spanish and Nahuatl Views on Smallpox and Demographic Catastrophe in Mexico," *Journal of Interdisciplinary History* 25:3 (1995):397-431; and Robert H. Jackson, *Indian Population Decline: The Missions of Northwestern New Spain, 1687-1840* (Albuquerque: University of New Mexico Press, 1994).

including the frequency of outbreaks of contagion and short-term fertility and growth following epidemics. Mechanisms for the transmission of contagion between communities and across regions are often inadequately discussed, and assumptions are made that epidemics simply spread from community to community.

The rebound or recovery of populations following epidemics often does not enter the discussion of native demographic patterns. As studies of Europe demonstrate, populations often recovered following major epidemic outbreaks, and, even with heavy population losses, enough women of child-bearing age survived to have children with their mates who did not die or with different men following the formation of new families. Deaths during epidemics also led to the redistribution of wealth, which allowed couples to marry at an earlier age and thus extend the period of potential child bearing by European women, who normally married in their mid-twenties. The sex ratio and the age at marriage is a demographic factor not often discussed in the context of native demographic patterns in the Americas. Native women married at earlier ages than did women in contemporary European populations, and, thus, women who survived potentially bore more children during a longer period of fertility. The age at first marriage for Guaraní women was as low as twelve or thirteen.⁸

How does the demographic history of the Paraguay missions fit into larger patterns of native population change after 1492? The Paraguay missions were a frontier institution located in a region contested between Spain and Portugal. This fact played a significant role in shaping demographic patterns of the missions. The Guaraní were sedentary agriculturalists who lived in clan-based communities prior to the arrival of the Spaniards. The Guaraní population of the larger Río de la Plata region was denser, and the population of the individual communities was larger than on other mission frontiers, such as in northern Mexico.⁹

That the Río de la Plata was a contested frontier during the seventeenth to early nineteenth centuries was an important factor. In this regard, the Río de la Plata mission frontier was unique in having such a long history of conflict between rival colonial powers that erupted periodically in declared or undeclared wars. Royal officials

⁸ Robert McCaa, "Matrimonio infantil, *Cemithualtin* (familias complejas) y el antiguo pueblo Nahua," *Historia Mexicana* 46:1 (1996):26.

⁹ Jackson, *Indian Population Decline*, 168-75; and Jackson, *Missions and Frontiers of Spanish America*, 459-76.

mobilized thousands of Guaraní militia from the missions for different campaigns, and the movement of Guaraní militiamen and Spanish soldiers through the region helped facilitate the spread of contagion. Armies during the early modern period were notorious for their lack of hygiene and carried disease with them on campaign or in encampments. More soldiers generally died from disease than on the battlefield. Guaraní mission militias were on campaign during the mortality crisis of the 1730s. In 1763, a Spanish army used the Paraguay missions as a base of operations for an invasion of Portuguese settlements in Rio Grande do Sul, and the soldiers carried smallpox into the region. Moreover, the presence of thousands of refugees from the eastern missions occupied by the Portuguese in the aftermath of the Treaty of Madrid (1750) only exacerbated the mortality rate during the 1764-1765 smallpox outbreak.

Warfare in the larger Río de la Plata was not the only mechanism for the spread of contagion. The Paraguay missions actively engaged in trade with Spanish settlements in the region and used the rivers to move goods. Disease traveled in the bodies of Guaraní, and settlers engaged in commerce and river transport made it easier for individuals ill with a given infection to cover larger distances than if they traveled overland. One report in the 1690s specifically related the arrival of rafts to the onset of smallpox.¹⁰

Hunter-gatherer populations that congregated in missions generally did not survive the onslaught of epidemics and the often unsanitary living conditions in the mission communities. This certainly was the case of the missions on the north Mexican frontier populated by hunter-gatherers, where the native populations declined to the point of virtual biological and cultural extinction.¹¹ This, however, did not occur in the Guaraní populations of the Paraguay missions. In nonepidemic years, more children generally died than did adults. Infant

¹⁰ Anua de las doctrinas del Parana, 1695, Angelis Collection 922 (hereinafter cited as AC), Rio de Janeiro.

¹¹ Robert H. Jackson, "Una frustrada evangelización: las limitaciones del cambio social, cultural y religioso en los 'Pueblos Errantes' de las misiones del Desierto Central de Baja California y la región de la costa del Golfo de Texas/A Frustrated Evangelization: The Limitations to Social, Cultural and Religious Change among the 'Wandering Peoples' of the Missions of the Central Desert of Baja California and the Texas Gulf Coast," *Fronteras de la Historia* 6 (2001):7-40; Robert H. Jackson, "A Colonization Born of Frustration: Rosario Mission and the Karankawas," *Journal of South Texas* 17:1 (2004):31-50; and Robert H. Jackson, "Congregation and Depopulation: Demographic Patterns in the Texas Missions," *Journal of South Texas* 17:2 (2004):6-38.

and child mortality rates tended to be high. Nevertheless, enough children survived to not only maintain population levels, but to guarantee population growth. In these ways, the Guaraní mission populations were similar to contemporary European populations.

Two sets of sources are generally employed in demographic studies of historic populations. They are population counts and registers of baptisms, burials, and marriages. Only fragments of two registers survive for the Jesuit missions, but none for Corpus Christi. The first is a short run of baptisms covering the years 1754-1765 from Santa Rosa mission, as well as a second short run for the early years of the nineteenth century. The second is a set of baptisms and burials for San Francisco de Borja from 1798 to 1811.¹²

The lack of sacramental registers does not pose a serious problem for the study of the demographic history of the Jesuit missions, since detailed censuses survive. There are two types of censuses that are of particular importance. One is the *catálogo de la numeración anual* that summarized the vital statistics of the missions including the size of the populations, as well as the number of baptisms/births, burials, and marriages recorded during the year. These data can be used to reconstruct crude birth and death rates that are important indicators of change over time in a population. The other is a more detailed census, often a tribute census, that recorded individuals and grouped them in family groups and by *cacicazgo*.

Massimo Livi Bacci and Ernesto Maeder also made use of the *numeración anual* in their recent study of general demographic patterns in the Paraguay missions.¹³ However, they calculated the vital rates for all of the Paraguay missions and, thus, did not systematically identify the significant variations in rates and patterns between the missions. Moreover, Livi Bacci and Maeder did not make use of the more detailed tribute censuses that document the age and gender and socio-political structure of the mission populations. Finally, the authors employed a different method to calculate crude birth and death rates used for the global rates as well as examples of epidemic mortality at specific missions. The authors averaged two consecutive populations as the basis for calculating crude rates in the subsequent year.¹⁴ While

¹² Santa Rosa Baptismal Register, 1754-1765, 1806-1828, Santa Rosa Parish Archive, Santa Rosa, Paraguay (hereinafter cited as SRPA), San Francisco de Borja Baptismal and Burial Register 1798-1811, Diocese of Uruguaina, Uruguaina, Brazil.

¹³ Livi Bacci and Maeder, "The Missions of Paraguay."

¹⁴ Livi Bacci and Maeder, "The Missions of Paraguay," 223. Livi Bacci and Maeder, for example, calculated crude death rates per 1,000 population of 941.5 in 1733 for

methodologically defensible, their analysis of the data also masks extreme volatility in vital rates and population change in years of marked mortality. In calculating a sample of the vital rates of the Corpus Christi mission, the recorded population at the end of the previous year is used when a figure is available. In those years for which figures are not available for the previous year, the base population has been estimated by subtracting the number of baptisms and adding burials from the population reported at the end of the year under analysis. This method provides reliable estimates of the vital rates.

There is a further methodological consideration related to the use of censuses. It is important to ascertain the purpose for the preparation of a census in order to be able to identify possible deficiencies in a population count. For example, young men might be inclined to avoid being counted in a census whose purpose was to identify potential conscripts for military service. Tribute censuses, such as those prepared in the Andean region of Spanish America, were inaccurate because native leaders hid tributaries. Many also decided to not pay their tax obligations or to work for the Spaniards, while others chose to migrate to Spanish towns or other native communities.¹⁵ A number of detailed *padrones*, such as the 1735 tribute counts, recorded the absence of a number of Guaraní, particularly adult male tributaries. As late as the 1790s, government officials in different jurisdictions within the larger region enumerated the Guaraní absent from the mission communities that they found living in the districts under their administration and attempted to get the fugitives to return to the ex-missions.

Many Guaraní from the missions went to work for the settlers in Paraguay and were enumerated in the censuses of the nonmission natives grouped in *encomienda* grants. There was also a community of fugitive Guaraní described in a 1736 report as being located west of the missions between the Mirinay and Corrientes rivers. The community, apparently organized along the lines of one of the missions, contained twenty-three rows of houses distributed in blocks to the neophytes from the different missions. One row of houses was assigned to the neophytes from San José, San Cosme, Candelaria, Santa Ana, Trinidad,

Guazu, 815 for Santa Rosa in the same year, and 848 for Santiago in 1719, which appear to be too high. Livi Bacci and Maeder, "The Missions of Paraguay," 203.

¹⁵ See, for example, Robert H. Jackson, *Regional Markets and Agrarian Transformation in Bolivia: Cochabamba, 1539-1960* (Albuquerque: University of New Mexico Press, 1994).

Corpus Christi, San Ignacio Miní, Mártires, and Concepción. Neophytes from Loreto, Santa María, and Aposteles occupied two rows of houses. Neophytes from Santo Tomé occupied three rows of houses, and those from La Cruz, located close to the site of the village, occupied four rows of houses. The natives used horses and supported themselves, in part, by rounding up cattle.¹⁶ A discussion of the size of the mission populations must take into account the reality that a degree of out-migration did occur.

Governments also prepared many censuses for tax purposes. Indigenous groups living under Spanish rule paid tribute, including the Guaraní living in the Paraguay missions. The Spanish government prepared and maintained voluminous tribute censuses, and some of these counts (*padrones*) survive. The *padrones* contain a wealth of information on the mission populations. The censuses divide the mission populations into the *cacicazgos* that the mission residents belonged to as late as the early 1840s, more than seventy years following the expulsion of the Jesuits and the transfer of the missions to the control of civil administrators. The *cacicazgos* were the socio-political jurisdictions within the missions, and the Guaraní caciques were the headmen who governed the mission populations. The censuses also divide the mission populations into family groups, and the analysis of the size of families provides clues as to whether or not a population was growing or was in decline.

The most valuable of the three detailed censuses analyzed herein is the 1759 count of the Corpus Christi mission.¹⁷ The Jesuits included the date of birth/baptism of each mission resident, as well as the place of origin for those born outside of the mission. This allows for an accurate reconstruction of the age and gender structure of the population at one point in time. Moreover, information on the place of origin of the Guaraní provides clues to marriage patterns. The vast majority of men from Corpus Christi married women from the same community, even though there were several missions nearby with large pools of potential wives. This maintained social stability and reinforced good relations between the different *cacicazgos* within each mission. Many other *padrones* recorded ages, but these figures were not as precise as those calculated using the 1759 Corpus Christi count.

¹⁶ Rafael Carbonell de Masy, Teresa Blumers, and Norberto Levinton, *La reducción jesuítica de Santos Cosme y Damián: su historia, su economía y su arquitectura, 1633-1797* (Asunción: Fundación Paracuaria, 2003), 142.

¹⁷ Matricula deste Pueblo de Corpus Christi, Corpus Christi, 1759, Archivo General de la Nación, Buenos Aires (hereinafter cited as AGN), Sala 9-17-3-6.

Another key aspect to the study of populations is the status of disease treatment during the seventeenth and eighteenth centuries and what methods the Jesuits had to combat epidemics. The germ theory did not gain general acceptance until the end of the nineteenth century, and, during the period of the Jesuit tenure in the missions, theories about disease ranged from the belief that epidemics were sent as a punishment or blessing by God, that disease resulted from imbalances in the four basic humors (blood, phlegm, choler, and melancholy), or that it arose as poisonous clouds called miasma from rotting vegetation, decaying corpses, or other corrupt material.¹⁸

The most common technique used in Europe at the time was quarantine, to physically isolate those infected by contagion away from the rest of the population in a pest house where those suffering received minimal, if any, care, and to prevent the movement of people into or out of communities where an epidemic had broken out. The Jesuits also practiced quarantine in the missions, separating the ill from the general population.¹⁹ However, as mortality levels during epidemics in the seventeenth and eighteenth centuries show, quarantine measures did not always prove effective. Moreover, in some instances, families resisted sending ill family members to plague hospitals, as documented during a 1786 smallpox outbreak at ex-mission Aposteles and San José.²⁰

During the seventeenth and eighteenth centuries, smallpox was the greatest killer of native peoples in the Americas. The Edward Jenner cowpox vaccine, first described in a 1796 publication, did not reach Spanish America until the early nineteenth century, and the earliest reference to the use of inoculation by variolation in this area was in 1785.²¹ In that year, a doctor inoculated Guaraní living at San Miguel, significantly reducing mortality from the contagion. Officials at other missions, however, still relied on quarantine in temporary hospitals for the sick and for those not previously exposed to

¹⁸ For contemporary European demographic patterns, theories of disease, and methods used to combat epidemics, see Flinn, *European Demographic System*; and Jackson, *Indian Population Decline*.

¹⁹ Guillermo Furlong Cárdiff, S.J., *Misiones y sus pueblos de guaraníes* (Buenos Aires: [n.p.], 1962), 612.

²⁰ Royal officials reported Guaraní at Aposteles hiding the sick to prevent them from being sent to the quarantine hospital. Expediente s[ob]re la Epidemia de Viruelas q[u]e acometio a los Pueblos de S[a]n J[ose]ph y Aposteles, Candelaria, 23 November 1786, AGN, 11-8-3, exp. 52.

²¹ Variolation was a smallpox treatment introduced in Europe in the early eighteenth century from the Middle East, where it had a long history of use.

smallpox.²² A decade later, in 1796, the doctor stationed at ex-mission Yapeyu inoculated 126 people at ex-mission San Francisco de Borja during a smallpox epidemic; only fifteen people died. The doctor attributed those deaths to other complications, such as venereal disease that would have weakened the immunological system of those also infected by smallpox.²³ Inoculation by variolation entailed injecting pus from a ripe pustule on the skin of a smallpox victim into the body of a healthy individual, in the hope that the resulting infection would be milder. However, smallpox was such a dreaded disease that there was general popular resistance to the procedure perceived to spread contagion and place the healthy at risk of dying from a horrible disease. The Spanish government disseminated information on the technique through Spanish America in the last decades of the eighteenth century. Doctors first used the procedure in Mexico City during a smallpox epidemic in 1779, and, two years later, after the contagion had spread northward to the mission frontiers, several Dominican missionaries in Baja California inoculated neophytes at their missions. Death rates at the missions where the neophytes had been inoculated were much lower than at neighboring missions where the natives went unprotected.²⁴

There was little that the Jesuits could do to protect the Guaraní neophytes from periodic epidemics and the inadequacy of treatment in the missions. The relative ineffectiveness of medical attention, particularly prior to the first uses of inoculation by variolation and the Jenner cowpox vaccine in the 1780s, 1790s, and early 1800s, can be seen in the large drops in the population of Corpus Christi during epidemics. Despite the fact that mission populations recovered after epidemics, other health issues emerged that impacted which sites were chosen for the mission. The Jesuits established Corpus Christi in 1622 and relocated the mission to a new site in 1629 on the other bank of the Paraná River. According to a contemporary report, the Black Robes made the move to a site with "mejor tierra," or better lands.²⁵ The

²² Expediente s[ob]re la Epidemia de Viruelas q[u]e acometio a los Pueblos de S[a]n J[os]e y Aposteles, Candelaria, 23 November 1786, AGN, 11-8-3, exp. 52.

²³ Fúrlong Cárdiff, *Misiones*, 609.

²⁴ Robert H. Jackson, "The 1781-1782 Smallpox Epidemic in Baja California," *Journal of California and Great Basin Anthropology* 3 (1981):138-43.

²⁵ Carta Anua de Corpus Christi, 1629, AC 28, 876.

Figure 1
Population of Corpus Christi Mission, 1643-1802

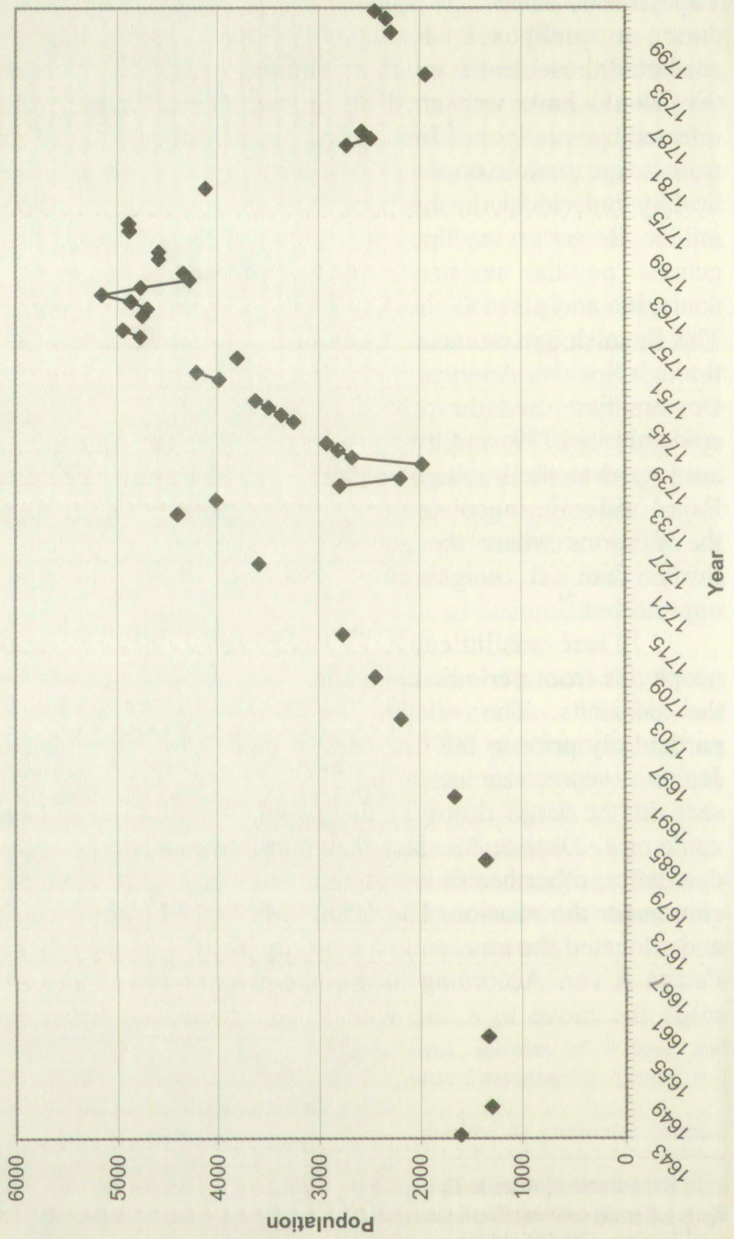


Table 1
Population and Vital Rates of the Population of Corpus Christi Mission,
in Selected Years

Year	Population	Families	Baptisms	Burials	Crude Birth Rate	Crude Death Rate	Average Family Size
1702	2,184	520	154	91	72.6*	42.9*	4.2
1724	3,584	799	218	132	62.3*	37.7*	4.5
1733	4,008	824	189	585	42.9*	132.8*	4.9
1736	2,190	436	78	256	43.4	142.4	5.0
1739	2,667	630	183	72	73.6	28.9	4.2
1740	2,808	696	185	67	69.4	25.1	4.0
1741	2,922	725	273	156	97.2	55.6	4.0
1744	3,241	830	246	118	79.0*	37.9*	3.9
1745	3,364	837	253	110	78.1	33.9	4.0
1746	3,488	847	274	168	81.5	49.9	4.1
1747	3,619	860	264	115	75.7	33.0	4.2
1753	4,588	881	305	177	68.4*	39.7*	5.2
1756	4,773	974	298	152	64.4*	32.9*	4.9
1759	4,753	1,043	251	249	52.8*	52.4*	4.6
1762	5,149	1,136	213	215	43.8	44.2	4.5
1763	4,771	1,185	294	261	57.1	50.7	4.0
1764	4,280	1,035	250	643	52.4	134.8	4.1
1765	4,342	1,069	318	203	74.3	47.4	4.1
1767	4,587	1,205	330	212	73.8*	47.4*	3.8
1798	2,344	537	112	169	46.7*	70.4*	4.0
1799	2,345	511	105	108	44.8	46.1	4.6
1802	2,443		92	77	39.4	33.0	
1803	2,184	448	98	69	40.1	28.2	4.9

* Estimated.

report also noted that the site the mission was moved from was not healthy ("malsana") and noted the outbreak of dysentery. Seventy years later, the mission was moved to its final and current site on the east bank of the Paraná River. According to the *carta anua* of 1699, the decision had already been made to relocate the mission, and a residence for the missionaries and houses for the Guaraní, all with tile roofs, had been built at the new location.²⁶

During the course of the seventeenth century, the population of Corpus Christi stagnated. In 1643, it was 1,650, 1,331 in 1657, and 1,350 in 1682 (see Figure 1). Following the relocation of the mission to a new site in 1699, the number of Guaraní living in the mission increased, and the growth resulted from robust birth rates. In 1702, for example, the crude birth rate was 72.6 per thousand population, and it was 62.3 in 1724. The crude death rate in the same years was 42.9 and 37.7 respectively. In 1691, the population totaled 1,655, and it reached 2,763 in 1714, 3,138 in 1724, and 4,400 in 1731, prior to the three epidemics during the 1730s.²⁷

Contagion exacted a heavy toll on the population of Corpus Christi. In five years the numbers showed a decline in population of more than 2,000. Between 1733 and 1735, it dropped from 4,008 to 2,790, and to 2,190 in 1736. The crude death rate reached 132.8 in 1733 and reached 142.4 in 1736 (there are no data available for 1735). The population appears to have escaped the horrific mortality that occurred at other missions during the 1738-1740 smallpox outbreak, and the population recovered and grew over the next several decades. It reached a low of 1,975 in 1738, but then increased to 2,922 in 1741, 3,488 in 1746 and 4,944 a decade later in 1757 (see Table 1).²⁸

²⁶ Carta Anua, [n.p.], 1699, AC 925.

²⁷ Jackson, *Missions and Frontiers of Spanish America*, 464-76.

²⁸ For the sources, see Maeder, "La población de las misiones de guaraníes, 1641-1682," 49-80; Maeder, "Fuentes jesuíticas de información demográfica misional," 45-57; Fúrlong Cárdiff, *Misiones y sus pueblos de guaraníes*, 175-79, 674; Thomas Whigham, "Paraguay's Pueblos de Indios: Echoes of a Missionary Past," in *The New Latin American Mission History*, ed. Erick D. Langer and Robert H. Jackson (Lincoln: University of Nebraska Press, 1995), 168; Pablo José Hernández, *Organización social de las doctrinas guaraníes de la Compañía de Jesús* (Barcelona: Gustavo Gili, 1913), 2:616-17; Júlio Ricardo Quevedo dos Santos, *Guerreiros e jesuítas na utopia de Prata* (Bauru, São Paulo: EDUSC, 2000), 96; individual annual censuses of the Jesuit missions, various years, in Catálogo de la numeración anual de las Doctrinas del Río Paraná Año, and Catálogo de la numeración anual de las Doctrinas del Río Uruguay, AGN, Sala IX 7-2-1, 6-9-6, 6-9-7, 6-10-6; Empadronamiento de los Treinta Pueblos de Misiones, por el Coronel Don Marcos de Larrazabal, 1772, AGN, Sala 9-18-8-4; 1798,

Smallpox struck Corpus Christi again in 1764, although the 1764 report on mortality caused by the contagion did not record the number of victims. Based on the burials reported for the year, a total of 643 people died at the mission in 1764, and the crude death rate reached 134.8, or more than 13 percent of the population. The numbers dropped from 4,771 recorded in 1763, to 4,280 in 1764, or a net decline of more than 400. At the time of the epidemic, only 317 refugees from the eastern missions still lived there. This suggests that overcrowding was not a problem at Corpus Christi, which may have been a factor in the high mortality at other missions such as Loreto. In the wake of the epidemic, the population of Corpus Christi began to grow again, totaling 4,587 in 1767.²⁹

Following the expulsion of the Jesuits and their replacement by Mercedarians, the population of Corpus Christi gradually declined because of out-migration and epidemics. In 1772, the population totaled 4,887, showing continued recovery following the 1764 smallpox epidemic. Another census prepared five years later in 1777 recorded additional details on the structure of the population that totaled 4,134.³⁰ Smallpox struck the mission in that year, and, by the time of the preparation of the census in September (spring), 277 Guaraní had died as against 64 births, resulting in a net decline of 213. The census shows a balanced population in terms of gender. The number of females totaled 2,080, or 50.2 percent. This figure does not support a hypothesis for large scale out-migration by men. Moreover, the census shows that the population continued to grow robustly, despite the smallpox outbreak during the year. Young children classified as *párvulos*

AGN, Sala 18-2-4; 1799, AGN, Sala 18-2-5; Individual Missions Census for 1801 found in AGN, Sala 9-17-3-6; 1803, AGN, Sala 18-3-3; 1702, Catálogo de la Numeración de las Doctrinas del Río Paraná, Catálogo de la Numeración de las Doctrinas del Río Uruguay, Manuel Gondra Collection, MG 592, Benson Latin American Collection, General Libraries of the University of Texas at Austin; Edgar Poenitz and Alfredo Poenitz, *Misiones, provincia guaranítica: defensa y disolución* (Posadas: Editorial Universitaria, Universidad Nacional de Misiones, 1993), 54-55; Aurélio Pôrto, *História das missões orientais do Uruguai* (Pôrto Alegre: Livraria Selback, 1954), 1:38, 48, 52, 57, 66, 70, 81; Pedro Vives Azancot, "Entre el esplendor y la decadencia: la población de misiones, 1750-1759," *Revista de Indias* 42:169-70 (1982):541-44; and Ernesto Maeder and Ramón Gutiérrez, *Atlas histórico y urbano de la región del nordeste argentino* (Resistencia: Instituto de Investigaciones Geohistóricas, CONICET, FUNDANORD, 1994).

²⁹ Jackson, *Missions and Frontiers of Spanish America*, 464-76.

³⁰ Juan Bautista Flores, Empadronamiento del Pueblo del Corpus, Corpus Christi, 30 September 1777, AGN, Sala 9-6-9-7.

constituted 20.2 percent of the total, and the average family size was 4.7, suggesting that large families were still the norm.

The population declined in the 1780s and 1790s. In 1785, 2,575 Guaraní reportedly were still at the mission, but the population dropped to 1,946 in 1793. Another detailed census prepared in 1799 further documented the level of out-migration from Corpus Christi.³¹ According to the census, 2,287 Guaraní still lived in the mission but another 1,671 were absent. The majority of the Guaraní absent were men and boys, or 65.8 percent of the total, with adult males constituting 31.7 percent of those absent. Two hundred and sixty-eight married couples were also gone. Men and women left with their families, but it was easier for men to leave than for women. Although widows generally outnumbered widowers in the missions, the census showed that more widowers were absent: 147 as against 29. Among those still at the mission were 103 widows and only 13 widowers. The number of orphans provides another indication of the predominance of men among those absent: 115 girls and 327 boys. Despite efforts by royal officials, the fugitives did not return to Corpus Christi. In 1801, the population was 2,443, indicating continued growth through natural reproduction.³²

Out-migration resulted from several factors, particularly in the years following the expulsion of the Jesuits. Individuals or families chafed under the control and authority of the Jesuits and, later, the civil administrators appointed to manage the missions following the expulsion. Many chose instead to leave the mission communities. Work opportunities existed in the Spanish colonial world outside of the missions, particularly as the economy of the Río de la Plata region grew in the last decades of the eighteenth century. One scholar emphasized the importance of the Guaraní from the missions in the formation of the society of Uruguay, particularly in the labor market in the Río de la Plata.³³ The groups within the mission populations most likely to be absent were economically mobile young adult males, and many Guaraní routinely left the mission communities to go to the Spanish towns in the region to sell goods on their own behalf or for the Jesuits

³¹ Juan Valcarcel, Estado que manifiesta el número total de Almas presentes y que se compone este Pueblo del Corpus del Paraguay, y de las que se hallan profugas..., Corpus Christi, 27 April 1799, AGN, Sala 9-18-2-2.

³² Jackson, *Missions and Frontiers of Spanish America*, 464-76.

³³ Luis Rodolfo González Rissotto, "La importancia de las misiones jesuíticas en la formación de la sociedad uruguaya," *Estudios Ibero-Americanos* 15:1 (1989):191-213.

and, later, for the civil administrators. This acquainted the Guaraní with the larger colonial world and provided opportunities to obtain work.

During major epidemic outbreaks, Guaraní also fled the missions to avoid exposure to contagion as well as to avoid quarantine.³⁴ Officials reported the reluctance of Guaraní to send their family members to temporary quarantine hospitals during epidemics and most likely associated quarantine with death, particularly since the Jesuits and, later, the civil administrators ordered the quarantine not only of the sick but also of those individuals who had been in contact with the sick.

How did epidemic mortality and the patterns of recovery modify the age and gender structure of the population of Corpus Christi mission? The 1759 tribute census provides a detailed look at the population of Corpus Christi at one point in time, and, as noted above, the Jesuits included the date of baptisms of the majority of the Guaraní, so the age and gender structure can be accurately reconstructed in addition to the family structure (see Table 2 and Figure 2). The population totaled 4,530, plus another 112 identified as Guañanas, most likely a group from the Chaco region, congregated on the mission in 1724, 1730, and 1754. The Guañanas population at Corpus Christi has not been included in the analysis here because the date of baptism of the adults, when recorded, is not the same as the date of birth, as it is for children born at the mission. The Guaraní population evidenced a slight gender imbalance, with more females than males: a total of 2,321 females as against 2,209 males. Moreover, women who reached an age of 50 or over generally outlived men. There were 206 men over the age of 50 and only 6 over 70. In contrast, there were 220 women over the age of 50 and 20 over 70.³⁵

Data from the census shows that Corpus Christi was a relatively closed community as regards the selection of marriage partners. With the exception of a handful of women originally from the Chaco region and from neighboring missions, the vast majority of Guaraní men at Corpus Christi married women from the different *cacicazgos* in the mission. Corpus Christi men married eight Guañana

³⁴ Expediente s[ob]re la Epidemia de Viruelas q[u]e acometio a los Pueblos de S[a]n J[ose]ph y Aposteles Candelaria, 23 November 1786, AGN, 11-8-3, exp. 52.

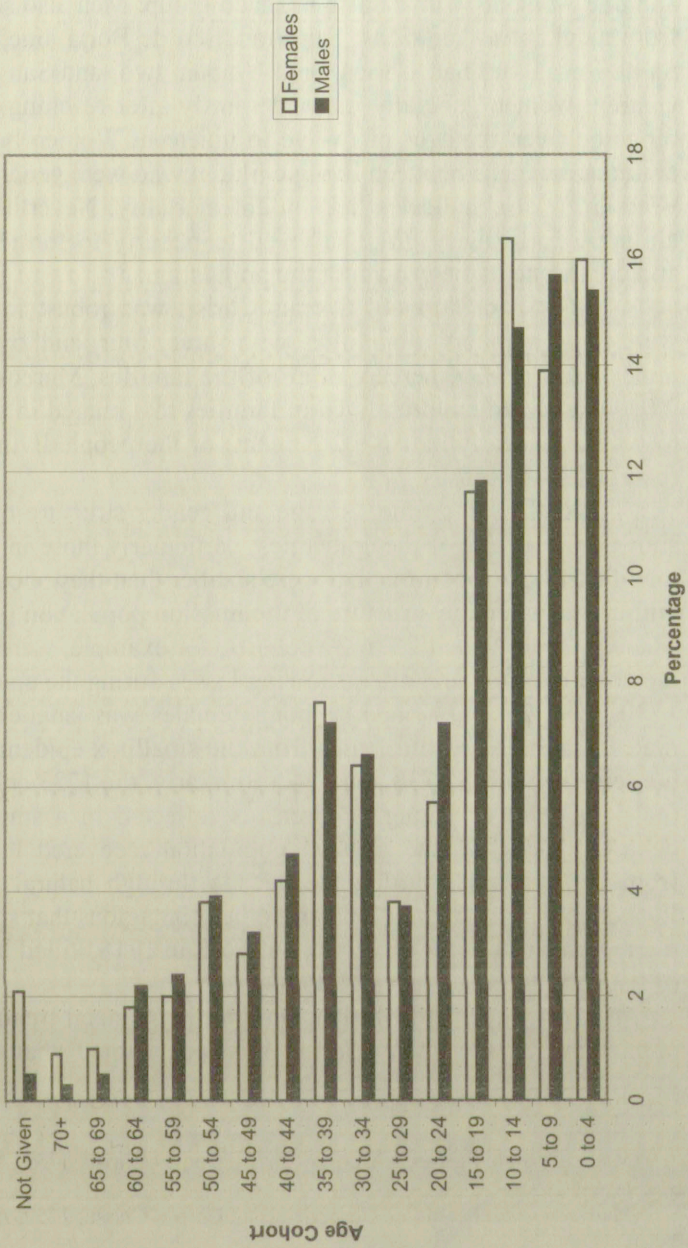
³⁵ Matricula deste Pueblo de Corpus Christi, Corpus Christi, 1759, AGN, Sala 9-17-3-6.

Table 2
Age and Gender Structure of Corpus Christi in 1759

Age Cohort	Males #	Percentage of total population	Females #	Percentage of total population
0-4	339	15.4	372	16.0
5-9	346	15.7	324	13.9
10-14	324	14.7	380	16.4
15-19	261	11.8	269	11.6
20-24	160	7.2	133	5.7
25-29	82	3.7	89	3.8
30-34	146	6.6	148	6.4
35-39	159	7.2	177	7.6
40-44	104	4.7	97	4.2
45-49	70	3.2	64	2.8
50-54	85	3.9	89	3.8
55-59	53	2.4	47	2.0
60-64	49	2.2	42	1.8
65-69	13	0.5	22	1.0
70+	6	0.3	20	0.9
Not Given	12	0.5	48	2.1
Total	2,209		2,321	
Guañanas	52		60	
Total	2,261		2,381	
Total Population	4,642			

Matricula deste Pueblo de Corpus Christi, AGN, Sala 9-17-3-6.

Figure 2
 Age and Gender Structure of Corpus Christi Mission in 1759
 (in percentages respective to the total male and female populations)



women from among the groups congregated in 1724, 1730, and 1754, and one Abipone woman, also a Chaco group. Men also selected wives from neighboring missions: San Francisco de Borja, one; Loreto, two; Santa Rosa, one; San Carlos, one; Ytapua, two; and San Ignacio, one. Guaraní women generally married shortly after reaching puberty, in a range between the ages of twelve to nineteen. Women bore numerous children, but gaps between living children who were generally born two years apart also indicates high infant mortality. Nevertheless, enough children, particularly girls, survived to puberty to form new families and contribute to the growth of the population.³⁶

The population of Corpus Christi was robust in 1759. There were large numbers of families with three, four, and five children, a total of 354 or 33.4 percent of all of the families. Moreover, a total of 2,029 adults and children lived in families that ranged in size from five to seven, or nearly half (49.2 percent) of the people living in families recorded in the census.³⁷

At the same time, the age and gender structure of the mission showed the affects of the epidemics, particularly those in the 1730s, as manifested in age cohorts that were smaller than they should have been within the larger age structure of the mission population (see Figure 2). The age 20 to 24 and 25 to 29 cohorts, for example, were smaller than the cohorts before and after, showing losses during the epidemics of the 1730s. The 20 to 24 cohort among females was smaller than that of males, and both showed losses from the smallpox epidemic that struck the region between 1738 and 1740. Similarly, the 1733 epidemic culled the population of young children, as reflected in a small age 25-29 cohort.³⁸ However, the mission population recovered losses suffered from the epidemics during the decade through natural reproduction. Earlier epidemics of smallpox and other contagions that spread through the region, such as the smallpox outbreak in 1718, killed large numbers of both adults and children of both sexes.³⁹

Livi Bacci and Maeder, interpreting general trends in the total population of the thirty Jesuit missions, noted that the Guaraní

³⁶ Matricula deste Pueblo de Corpus Christi, Corpus Christi, 1759, AGN, Sala 9-17-3-6.

³⁷ Matricula deste Pueblo de Corpus Christi, Corpus Christi, 1759, AGN, Sala 9-17-3-6.

³⁸ Matricula deste Pueblo de Corpus Christi, Corpus Christi, 1759, AGN, Sala 9-17-3-6.

³⁹ Jackson, "Missões nas fronteiras de América espanhola," 51-78.

population was relatively young, with large numbers of children.⁴⁰ The data for Corpus Christi confirms this generalization. Birth rates were robust, particularly following epidemics. Table 1 summarizes a sample of vital rates at Corpus Christi in selected years. Crude birth rates for four years between 1733 and 1740 averaged 57.3 per thousand population. This increased to an average of 82.3 for five years between 1741 and 1747, was 61.9 in three years in the 1750s, and 60.1 in five years in the 1760s. With these robust birth rates, the population of Corpus Christi grew in nonepidemic years and rebounded or recovered following severe mortality crises such as the series of epidemics in the 1730s. There were also increases in the number of marriages following mortality crises, indicating the formation of new families.⁴¹ In 1740, for example, the Jesuits recorded seventy marriages, up from fifty-two in 1733, thirty in 1736, and forty-two in 1739. Similarly, the Black Robes celebrated ninety marriages in 1765, the year following a severe smallpox outbreak at the mission that killed more than six hundred people. They had recorded only ten in the previous year during the epidemic.⁴²

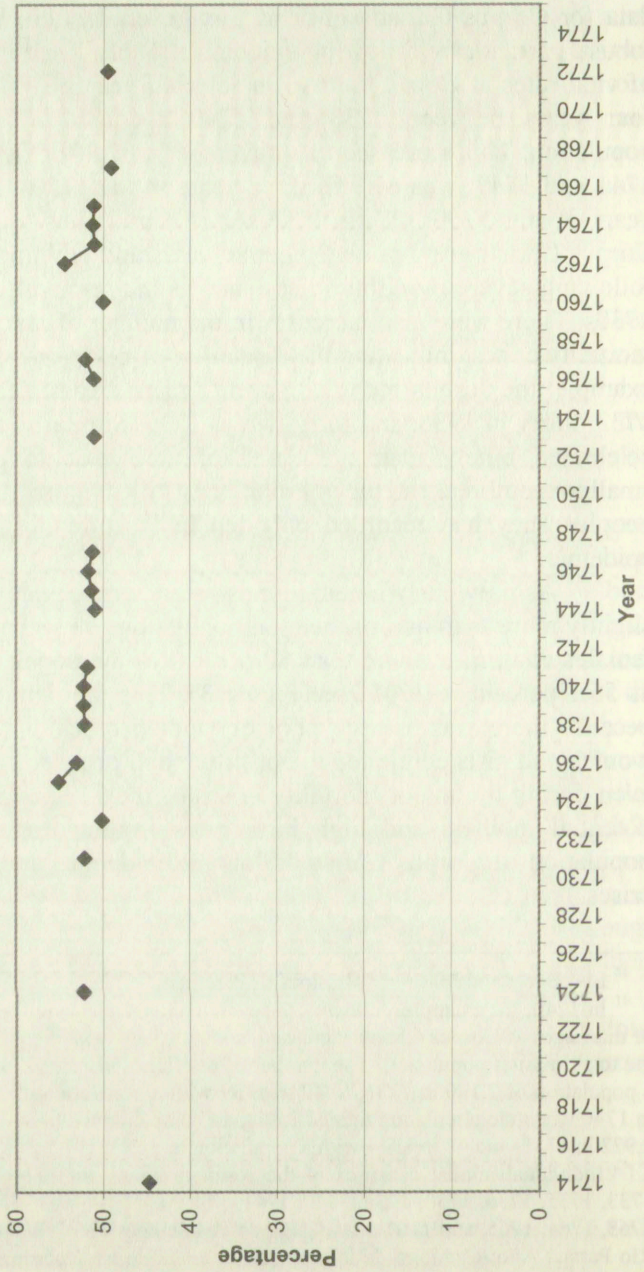
As previously noted, in most years women and girls constituted slightly more than half of the total population. Between 1724 and 1765, females comprised more than 50 percent of the population and as high as 55.1 percent in 1735 (see Figure 3). This fact alone was important because there was a large pool of women of child-bearing age, and women and girls continued to constitute half or more of the population, even during the major mortality crises of the 1730s. The large pool of potential mothers and high birth rates explain the recovery of the population of Corpus Christi following epidemics and other mortality crises.

⁴⁰ Livi Bacci and Maeder, "Missions of Paraguay," 212-15.

⁴¹ In 1740, for example, following 3 severe epidemics during the 1730s, the number of marriages at Corpus Christi increased, and marriage rates were higher in relation to the total mission population. The number of marriages increased from 30 in 1736 with a population of 2,190 in 1736, to 42 in 1739 with a population of 2,667, jumped to 70 in 1740 when the population totaled 2,808, and then dropped to 47 with a population of 2,922 in 1741, and 48 in 1744 with a population of 3,241.

⁴² Individual annual censuses of the Jesuit missions for 1711, 1714, 1724, 1731, 1733, 1735, 1736, 1738, 1739, 1740, 1741, 1744, 1745, 1746, 1747, 1757, 1760, 1762, 1763, 1764, 1765, and 1767 titled *Catálogo de la numeración anual de las Doctrinas del Río Paraná Año*; *Catálogo de la numeración anual de las Doctrinas del Río Uruguay*, AGN, Sala IX 7-2-1, 6-9-6, 6-9-7, 6-10-6; and *Empadronamiento de los Treinta Pueblos de Misiones, por el Coronel Don Marcos de Larrazabal*, [n.p.], 1772, AGN, Sala 9-18-8-4.

Figure 3
Females as a Percentage of Total Population at
Corpus Christi Mission



The pattern of a population with more females than males stands in marked contrast to missions located on other Spanish frontiers, such as California. At Santa Cruz mission, for example, established in 1791, women and girls constituted less than a third of the total population by the early 1830s. In the years 1791 to 1832, the Franciscans stationed there baptized 1,133 females. In the last named year, however, only eighty-seven women and girls survived, that is, 8 percent of all the females baptized over a period of forty-one years. They represented only 31 percent of the total population of the missions.⁴³

Social and political stability and persistence was one element that distinguished the Paraguay missions from missions on other frontiers such as California where Indian populations experienced demographic collapse. The persistence of the Guaraní clan system within the Paraguay mission communities insured social and political stability over the long Jesuit tenure, as the Jesuits also shared power with the caciques through the Iberian-style municipal government implemented in the mission communities as part of a system of indirect rule. Caciques retained authority and influence within the mission communities, and the Jesuits and royal officials reinforced their status and authority in several ways, such as by obtaining exemptions from royal officials for the caciques from tribute payments and labor obligations. As discussed above, record keeping also reflected the status and authority of the caciques. The Jesuits, and the priests that replaced them following the expulsion of the Black Robes, identified the cacique of Guaraní commoners when they recorded baptisms and other sacraments,⁴⁴ and the detailed tribute censuses recorded the mission populations by *cacicazgos*. Inter-marriage between the subjects of the *cacicazgos* and the high rate of endogamy within the mission community also reinforced and solidified the internal social and political structure.

The *cacicazgos* varied in the size of population, as demonstrated in an analysis of censuses prepared in 1759, 1777, and 1801 (see Tables 3-4). In the first year, the *cacicazgos* ranged in population between 16 people living in Ara and 25 in Aracay, to a high of 346 in Pindobi. In 1777, it ranged from a low of 21 reported for

⁴³ Jackson, *Indian Population Decline*, 112-13.

⁴⁴ Only several fragments of baptismal registers survive from the Paraguay missions, including from Santa Rosa and San Francisco de Borja. Santa Rosa Baptismal Register, SRPA, San Francisco de Borja Baptismal and Burial Register. Priests recorded the caciques of the Guaraní commoners as late as the early 1840s.

Table 3
Population of Corpus Christi by *Cacicazgo* in 1759

<i>Cacicazgo</i>	Population	<i>Cacicazgo</i>	Population
Aburo	225	Pice	46
Caribo	107	Caitu	104
Cayobi	64	Putupi	128
Araira	60	Tamopa	224
Ybape	105	Chate	101
Depicho	105	Guvici	31
Cayubi	143	Natimu	91
Yacare	218	Piyu	93
Pindobi	346	Guaraci	44
Guiraya	72	Guavaray	134
Ocariti	68	Abairuyu	65
Aretu	108	Chopay	105
Amoaragara	139	Ara	16
Ayuruyu	47	Guatape	186
Guarapipo	64	Vic	176
Peruyu	64	Tayeo	113
Micaela Oquendo	67	Moacati	68
Santiago Apuaiy	72	Yaguarendi	114
Rafael Albaite	74	Cotingua*	37
Papa	241	Pinchana**	58
Miranda	137	Don Dias***	21
Aracay	25		

*Identified as Guañanes-1728; **Identified as Guañanes-1730; ***Identified as Guañanes-1758.

Matricula deste Pueblo del Corpus Christi, AGN, Sala 9-17-3-6.

Table 4
The Population of Corpus Christi Mission in 1801 by *Cacicazgo*

<i>Cacicazgo</i>	Present	Fugitives	<i>Cacicazgo</i>	Present	Fugitives
Abaxo	176	52	Papa	156	47
Caribi	61	52	Mbaicobu	73	46
Soyabi*	13	10	Arazoy	27	1
Aiarira	26	29	Pizi*	25	29
Ybape*	14	46	Coitu	87	34
Tariqui	60	30	Potagui*	77	32
Guyabuy*	42	52	Tamupa	87	49
Yacari*	128	26	Chave*	41	29
Pindoby*	46	17	Mbaqui	13	10
Paraguayu*	190	107	Quiraca	24	19
Ocariti*	29	42	Puya*	32	29
Aroti*	63	21	Quairi*	21	20
Avengari*	72	31	Yeyu	47	31
Ayuruyu*	27	12	Mbairayu	33	9
Guirupepo*	0	20	Charpai	36	21
Peruyu*	13	21	Guarape	110	31
Oquerda*	27	17	Vic	63	44
Manoaqui*	34	16	Tayno	60	35
Mbarire*	40	23	Moacuti	42	11
Naguarendi*	39	19	Camuna*	15	6
Cohique	33	27			

*Cacique a fugitive.

Joaquín de Soria, Padron del Pueblo de Corpus, Corpus Christi, 26 March 1801, AGN, Sala 9-17-3-6.

Ybape to a high of 216 for Yacare. The 1801 census noted the absence of individuals who had left and those the civil administrator classified as "fugitives." Moreover, the census noted that 20 of the 40 caciques were gone. The smallest *cacicazgos* were Mbaqui with 13 present and 10 absent and Camuna with 15 present and 6 absent, including the cacique. At the other extreme was Paraguayu, which counted 190 present and 107 absent. Not surprisingly, the populations of the *cacicazgos* evidenced different patterns of change over time. Yacare counted 218 Guaraní in 1759 including the family of the cacique, 216 in 1777, and 128 present and 26 absent in 1801. The numbers of Pindobi dropped from 346 in 1759 to 58 in 1777, and 46 present and 17 absent in 1801. The population recorded for Piyu in 1759 was 93 present and 83 absent, and 25 present and 29 absent in 1801.

The populations of other missions on the frontiers of Spanish America evidenced different patterns. The Jesuit missions of the Chiquitos region of what today is eastern Bolivia were similar to the Guaraní missions in that the populations experienced losses from periodic epidemics but recovered and grew through natural reproduction as well as through the congregation of new converts.⁴⁵ The native populations drawn into the missions of northern Mexico in places such as Texas, Baja California, and California, on the other hand, declined to the point of virtual biological and cultural extinction. The California missions were one example of what can be called the worst case scenario for demographic collapse on frontier missions. Death rates were consistently higher than birth rates, even in nonepidemic years. The populations expanded as long as the Franciscans brought new recruits to live on the mission communities but dropped when the number of converts declined and birth rates were lower than death rates.⁴⁶

Two factors help explain the different trajectories of demographic change in Corpus Christi and the other Paraguay missions, missions on other frontiers such as the Chiquitos establishments, and the mission communities on the California frontier

⁴⁵ Robert H. Jackson, "Demographic Patterns on the Chiquitos Missions of Eastern Bolivia, 1691-1767," *Bolivian Studies Journal* 12 (2005):220-48.

⁴⁶ On demographic patterns in the California missions, see Jackson, *Indian Population Decline*; Jackson, *Missions and the Frontiers of Spanish America*; and Steven W. Hackel, *Children of Coyote, Missionaries of Saint Francis: Indian-Spanish Relations in Colonial California, 1769-1850* (Chapel Hill: Published for the Omohundro Institute of Early American History and Culture, Williamsburg, Virginia, by the University of North Carolina Press, 2005).

and other regions in northern Mexico, where native populations generally experienced rapid population losses. One was the different levels of socio-political organization of the native peoples. The Guaraní and the different native peoples brought to live on the Chiquitos missions were village-dwelling agriculturalists, whereas the natives of the Californias and Texas were either nomadic hunter-gatherers or residents of seasonal villages. The smaller populations of the missions in Texas and the Californias were more fragile, and losses of even small numbers of women of child-bearing age significantly reduced the ability of the populations to reproduce.

The second factor was the different degrees of political, and particularly social change, that the native peoples experienced and the level of social disruption and dislocation caused by the mission programs. The persistence of the Guaraní clan system in Corpus Christi and the other Paraguay missions buffered the changes the Jesuits attempted to introduce. Moreover, the Guaraní way of life did not radically change, and the Guaraní clearly benefited from the acquisition of new crops, livestock, and production techniques for such items as cloth and pottery. Individual Guaraní residents of Corpus Christi and the other missions took advantage of opportunities created by the development of markets in the larger Río de la Plata region. The natives brought to live on the missions in California and Texas, on the other hand, experienced considerable social dislocation and disruption in the missions and the collapse of traditional native society outside of the missions.

There is no question that epidemics of contagious crowd disease exacted a heavy mortality on the native populations of the Americas, but Dobyns' model of continuous decline in the face of waves of epidemics that spread across wide expanses of territory is in need of revision. Although the Paraguay missions constitute a somewhat unique case study, the analysis of demographic patterns and particularly mortality during periods of epidemics and rebound following epidemics suggests the need for the revision of the model.

Documenting heavy mortality during epidemics does not necessarily translate into evidence of short- or long-term population decline. Rather, as shown in the case of Corpus Christi, the Guaraní population recovered and experienced growth following epidemics. Moreover, mortality rates varied between missions, and not all missions experienced high death rates during epidemics. The means of transmission of epidemics also needs to be clearly identified. There are references to epidemics spreading through the Paraguay missions by

river transportation or in the wake of the movement of armies. In other frontier regions, disease did not spread as easily or as rapidly, as was the case in the Chiquitos missions of what today is eastern Bolivia, which did not experience epidemic mortality rates as high as in the Paraguay missions.

The Guaraní populations of the missions more closely resembled the contemporary European populations that experienced high epidemic mortality, chronically high infant and child mortality, but recovered and experienced low to moderate growth rates. The Paraguay missions were not the only frontier populations that recovered following decline resulting from severe epidemics. The Pueblo populations of New Mexico, for example, also declined, but then recovered and grew during the later eighteenth century. In both instances, the indigenous groups were sedentary agriculturalists, and the mission programs were not as disruptive of the socio-political structure as when compared to missions established among nomadic hunter-gatherers such as at Santa Cruz and the other California missions. The Pueblo revolt in New Mexico (1680) that freed the region of Spanish domination for twelve years sent a clear message to the missionaries and civil officials, who relaxed the elements of the mission program that had contributed to the uprising. Thus, the level of socio-political organization of native peoples and the degree of disruption of the mission programs specifically and the new colonial regime in general played a significant role in determining survival or decline not accounted for in Dobyns' model.

Spanish policy changed in the late eighteenth century under the influence of Enlightenment ideas and the drive to strengthen and centralize royal authority. One consequence of the changed policy was the decision to expel the Jesuits in 1767-1768, which transformed the Paraguay mission communities. Corpus Christi and the other Jesuit missions in Paraguay continued to exist as communities following the expulsion of the Black Robes and their replacement by priests from other missionary orders and civil administrators, who assumed control over the temporalities of the mission communities previously controlled by the Jesuits in conjunction with the caciques. However, the Bourbon reform program of the late eighteenth century set in motion economic and political changes in the Río de la Plata region that would lead to the demise of Corpus Christi and the other Paraguay missions during the violent transition to independence.⁴⁷

⁴⁷ Jackson, *Missions and Frontiers of Spanish America*, 377-88.

Political turmoil and the militarization of the Río de la Plata region directly contributed to the abandonment of Corpus Christi in the turbulent decade of 1810-1820. One consequence of regional conflict after 1810 was the physical destruction of many of the missions located in what today is Misiones (Argentina) in the wars between Portugal, Argentina, and Paraguay over control of the borderlands of the Banda Oriental (modern Uruguay) and neighboring areas. Already in 1801, during one phase of the prolonged series of wars that followed the French revolution, a Portuguese colonial militia force occupied the seven missions located east of the Uruguay River, in what today is Rio Grande do Sul, Brazil.⁴⁸ The eastern missions now served as a base of operations for Portuguese invasions of the region between the Uruguay and Paraná rivers in 1811 and 1812 and again in 1817 and 1818. During the last invasion, 3,190 people in Misiones died, and the invaders took 360 prisoners and sacked many of the missions. Moreover, a major battle occurred in early April of 1818 at San Carlos that resulted in massive damage to the church and associated buildings. The Paraguayans also attempted to assert sovereignty over the territory between the Paraná and Uruguay rivers, and occupied and sacked the mission communities along the eastern bank of the Paraná River in 1817, including Candelaria, San Ignacio, Santa Ana, Loreto, and Corpus Christi, as well as the missions just west of the Uruguay River.⁴⁹ The Guaraní abandoned many of the missions located in the war zone and sought refuge elsewhere or were forcibly relocated.

The descendants of the Guaraní residents of Corpus Christi and the other Jesuit missions still live in the region. However, the destruction and abandonment of the mission sites were followed by the growth across the ruins of the rainforest vegetation that the Guaraní had expended considerable labor on clearing to develop the mission community hundreds of years ago. Although largely overgrown with vegetation, there are still ruins at the site of Corpus Christi mission.

Unlike other frontier missions, the establishment of Corpus Christi and the other Paraguay missions did not result in the demise of the indigenous groups. The Paraguay missions began with larger and more demographically viable populations and were less disruptive than were mission programs on other frontiers of Spanish America. The Jesuits shared power with the traditional Guaraní caciques, and a

⁴⁸ Alfredo Poenitz and Esteban Snihur, *Herencia misionera*, Internet site, url: www.herenciamisionera.com.ar, Chap. 21. Website accessed on 5 April 2004.

⁴⁹ Poenitz and Snihur, *Herencia misionera*, Chaps. 26-28.

modified form of the clan socio-political system survived in the mission communities. On other mission frontiers, on the other hand, such as California, missionaries radically transformed native society and in particular destroyed political and social relationships. The disruption of traditional society also aggravated health conditions that contributed to drastic population losses.

An analysis of marriage patterns provides additional evidence for social stability within Corpus Christi and the other Paraguay mission communities. Different clans existed within the mission, identified in the Jesuit censuses and other records as *cacicazgos*. Data from the 1759 tribute census shows that men from Corpus Christi married women from other clans, thus solidifying social and political relations within the mission community.

Smaller hunter-gatherer populations drawn into missions on other frontiers such as California proved to be fragile and declined rapidly once congregated on the missions.⁵⁰ The more robust Guaraní population of Corpus Christi mission was much larger and, as already noted, was stable and experienced little disruption from the Jesuit missionary program. Corpus Christi and the other Paraguay missions more closely resembled contemporary European populations that were also high-fertility and high-mortality populations. Periodic epidemics ravaged the populations, but enough women of child-bearing age survived to form new unions and birth rates increased, leading to recovery. Unlike many other native populations drawn into missions on the frontiers of Spanish America that largely disappeared, the Guaraní of Corpus Christi survived the dissolution of the missions and to the present as a distinct population.

⁵⁰ On this comparison, see Robert H. Jackson, "Ethnic Survival and Extinction on the Mission Frontiers of Spanish America: Cases from the Río de la Plata Region, the Chiquitos Region of Bolivia, the Coahuila-Texas Frontier, and California," *Journal of South Texas* 19:1 (2006):5-29.