

The Peopling of 19th century Mexico: Critical scrutiny of a censured century*
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During the past five centuries, the Mexican people have undergone three enormous demographic transformations--holocaust in the sixteenth century, recuperation in the 17th and 18th, and transition, indeed demographic revolution in the twentieth. The nineteenth century, usually censured as embarrassingly stagnant, seemingly stands alone as a century of slow growth with few significant demographic developments.ⁱ Yet, while Mexico's caudillos and constitutionalists fought to rule the nation or defend against foreign attack, the peopling of Mexico advanced at a lively pace in the 19th century and, unlike other more rapidly growing countries in the Americas, grew solely by means of native stocks. Over four generations, from 1790, when the last colony-wide census was taken, to 1910, on the eve of a decade of violent revolution, the total population of Mexico increased more than three-fold, from 5 to more than 15 million inhabitants. Neither decades of political strife nor foreign invasions sufficed to stifle the vast demographic energy of nineteenth century Mexico.

*Paradójicamente, el problema más serio lo arrostra el investigador cuando desea perfeccionar el conocimiento de los mundos precolombino y colonial con una comprensión de la etapa formativa nacional, que tuvo como escenario el paisaje convulso del siglo XIX. Parece como si cayésemos en un vacío. Falta la documentación adecuada y la que hay no está expedita para su pronto empleo.*ⁱⁱ

--Gonzalo Aguirre Beltrán, 1946

The nineteenth century marked the apogee of the "many Mexicos", when central authority exercised hegemony only sporadically over the regions and rarely counted the populace. A census as comprehensive as that conducted by Viceroy Revillagigedo (1789-1793) was not repeated in Mexico for more than a century, in 1895, notwithstanding a constitutional provision from 1824 that regular censuses be taken to determine apportionment for the federal legislature. Founded anew in 1882, the Dirección General de Estadística did not attempt a nation-wide enumeration for thirteen years. When finally executed in 1895, the first national census proved much more comprehensive, sophisticated and trustworthy than the epitome of colonial census taking, the famed Revillagigedo count. Then in 1900 an unbroken string of national decennial enumerations was begun.

Earlier, decades of civil strife and political reform destroyed Mexico's vital registration system. Dependent upon popular compliance for the timely recording of life events--births, marriages and deaths--national registration was scarcely remedied by the Civil Registry Law of January 27, 1857. Mexico possesses some of the oldest parish books in the Americas, yet its ancient system of local registration remained in disrepair for more than seventy years. The shortcomings of civil registration are easily demonstrated. For example, from 1900 to 1910 the rate of natural increase according to civil registrations was only 0.2% per annum while census data prove that the rate was five times greater, at least 1.1%.ⁱⁱⁱ Modern standards of completeness were attained only in recent decades. These obstacles and many others notwithstanding, Mexican historians, writers and statisticians--from Fernando Navarro y Noriega to Moises González Navarro--laid the foundations of a demographic history of the nineteenth century from the scattered Mexican materials. While for recent generations of historians the allures of colonial demography have proven irresistible, the population history of the nineteenth century is dominated by the progenitors of Mexican statistics and

demography, Manuel Orozco y Berra, Antonio Peñafiel and others.^{iv}

Because the history of the peopling of the Mexican Republic in the past century must be pieced together from unconventional materials, some preliminary comments regarding sources and their trustworthiness are necessary. All figures for the nineteenth century are inexact, although probably less than reckonings for colonial times. The record of Mexico's nineteenth century demographic roots is contained in diverse state and local publications and archives. When brought together, the mounds of information are probably more abundant and sound than those for any century of colonial rule. The figures presented below for the nation, four large regions and the federal entities are reassembled from the publications of nineteenth century authorities. The resulting national figures do not differ greatly from other authoritative series, yet mine were constructed from a selection of the best available local or state figures, which, in turn, seem to have been based on some form of direct enumeration. Indeed, it is surprising that although there was only one nation-wide census in the past century, a national series can be constructed from numerous local and state-wide enumerations.^v

Interpolations, projections, and guesstimates are excluded from the base figures as much as possible. The major exception is Navarro y Noriega's compilations for 1811.^{vi} To compute decennial estimates for each state or federal entity, I used some 273 data-points for 32 entities (including Texas, Nuevo México, and Alta California as well as the Distrito Federal, but Nayarit was included in Jalisco and Quintana Roo in Yucatán).^{vii} Conventional methods of interpolation were applied to these raw figures. My series begins in 1790 with the Revillagigedo census as published by the Instituto Nacional de Estadística Geografía e Informática (1977) and supplemented with figures for the few entities not covered at that date, such as Chiapas.^{viii} I discarded the projections and speculations of the famous German scientist Alexander von Humboldt because, as we shall see, he wildly exaggerated late-colonial demographic growth rates. Navarro y Noriega's figures for 1811 are used reluctantly--simply because there are no others. His work, an informed speculation derived from head tax rolls and parish books, is considered the authoritative benchmark for the population of New Spain at the close of the colonial period^{ix}, but in the end Navarro y Noriega's conversion factors, extrapolations, adjustments and projections will not withstand sustained demographic scrutiny. The 1.5% growth rate implied by his figures--applied willy-nilly to all regions--is wholly improbable given the well-documented afflictions of late colonial Mexico--rising grain prices, famine, and recurrent epidemics of smallpox, measles, typhus, *matlazáhuatl* and others.

The end of my series is anchored in official results from the 1895 and 1900 censuses (but excluding "*ausentes*" from the counts).^x For the interim decades, from 1820 to 1890, reliable figures come from state or local authorities, many reprinted in *Estadísticas Históricas Mexicanas* (1984). For the middle of the century, the 10 volume *Diccionario Universal de Historia y Geografía* (México 1853-1855), edited by such luminaries as Lucas Alamán and Manuel Orozco y Berra, provides valuable data for many states and municipalities.^{xi}

The population of Mexico increased enormously in the nineteenth century. The real demographic achievements of Mexico in the nineteenth century must be placed in context to be appreciated. Mexico's recent demographic boom, with a 20 million increase in the 1970s alone, reduces the past to a pop, a paltry prologue to the present. Yet the population of Mexico increased enormously in the nineteenth century. The demographic density of Mexico almost tripled in the last century, even without taking into account the mid-century amputation of the most rapidly growing regions, Alta California, Nuevo México and Texas. From a nineteenth century perspective, Mexico's population growth was surpassed by few countries, mainly those attracting large contingents of immigrants, such as Argentina, Brazil, and Mexico's covetous neighbor, the United States of America. From 4.8 million inhabitants in 1790, the population of Mexico grew to 13.6 million in 1900, a growth

rate of nearly 1% compounded annually (Table 1).

- Table 1 -

The absolute growth amounts to more than 8 million in a century, due almost wholly to natural increase. In relative terms, France, Spain and most other European countries grew half as fast as Mexico.^{xii} Spain, which, like Mexico, began the century with some 5 million (1797), reached only 9 million in 1900. France, with almost six times as many people as Mexico in 1800, added only 1 million more inhabitants than Mexico over the course of the century. Comparison with North or South American nations, where record keeping was often even worse than in Mexico, is less certain yet it seems that only Chile, and possibly Peru, among the Andean Republics, grew faster than Mexico. In Mesoamerica and the Caribbean, four microstates outpaced Mexico--Costa Rica, El Salvador, the Dominican Republic, and Puerto Rico, but not nations with a million inhabitants or more like Colombia, Venezuela or Mexico's southern neighbor, Guatemala.^{xiii}

From the perspective of Mexico's own past, it is surprising to learn that natural increase during the nineteenth century probably surpassed earlier growth records. Colonial experts such as Gonzalo Aguirre Beltrán and Woodrow Borah place the nadir of the Indian population of Central Mexico somewhere between 1.1 million in 1608 and 1.3 million in 1646.^{xiv} Projecting their figures with the nineteenth century growth rate, 1%, would yield over 5.8 million inhabitants in 1800. That the entire Mexican sub-continent scarcely exceeded five million in 1790 suggests that colonial growth rates were on the whole somewhat less than the nineteenth century rate of one percent. Some historians paint a rosy picture of late colonial population growth to contrast it with the disorder of the early republic. Yet others sketch a basically uniform landscape for the period 1740-1860. Few modern historians doubt that the last half century of colonial rule was one of severe and recurrent mortality crises and demographic stagnation--as researchers have shown for the predominantly Indian locales of Acatzingo, Zacatelco, San Luís de la Paz, Cholula, the Mixteca Alta and elsewhere.^{xv} Yet, contemporaries such as Humboldt and José María Luís Mora believed that natural increase alone caused Mexico's population to double every 22 years (25 times per century!), a feat beyond the means of any nation in the nineteenth century and all but a few in the twentieth.^{xvi}

Orozco y Berra exposed the folly of such exaggerations, but he also recognized that independent Mexico was throttled demographically by political strife--independence wars, civil wars, caste wars, invasion by the United States, and later, war with France. Indeed, for the years 1810-1870, overall population growth averaged only 0.5% per annum (doubling every 144 years), compared with 1-1.5% toward the end of the century (Figure 1).

- Figure 1 -

"...las persecuciones é inseguridad que la guerra de independencia ocasionó en las poblaciones del centro de la República, produjeron una emigración muy considerable á Nuevo-León donde apenas se hicieron sentir los males de aquella guerra..."
--Diccionario Universal de Historia, 1855^{xvii}

"Fiebres misteriosas" ravaged city and countryside in 1813 and cholera, unknown in colonial times, raged in 1833 and 1850. Also new to Mexicans, and more devastating, was war mortality. Total demographic losses from political insurrection and invasion were substantial, perhaps totaling as many as 2.5 million by 1870. The Independence wars, with accompanying epidemics and scarcities, wiped out the demographic growth of an entire decade and spilled over into a second. Predictably, where the Grito de Dolores reverberated loudest, the toll of war was greatest. Until 1840, the center

of Mexico (defined in Table 1) suffered more than any other region, with the displacement or death of almost a million people, while the Center-North and North gained population. In the North, growth averaged over 2% yearly for four decades. These were boom years for Nuevo León, Nuevo México and Sonora, but they were only boomlets in Chihuahua and Coahuila, choked off by Apache raiding and disruptions from the war of 1846 (Figure 2 and Table 2).

- Figure 2 and Table 2 -

In the South apparent demographic losses are nothing more than statistical artifacts, the result of Navarro y Noriega's extravagant claim for Oaxaca in 1811 (which he calculated with an annual growth rate of 1.5% from 1790 to 1810).^{xviii} Growth in the South was generally lower than average, but rarely negative with the exception of the period of the caste wars. In the 1840s two great political-demographic tragedies assaulted Mexico--caste war in the Yucatán peninsula and war with the U.S.A. From 1840 to 1860 the population of Yucatán dropped 50%, a toll of 100-300 thousand deaths or displacements (there is a great discrepancy in estimates), including several thousand unfortunates who were shipped to Cuba as enslaved field hands or servants. After 1860 the population of Yucatán steadied at around 200,000 inhabitants.^{xix}

War with the United States (1846-48) was even more tragic. Casualties from the American invasion were severe, but unmeasurable because the statistical apparatus collapsed at the onslaught of the American armies. With the signing of the Treaty of Guadalupe Hidalgo on February 2, 1848, Mexican plenipotentiaries surrendered nearly half the national territory along with some 200,000 Mexican citizens who resided therein.^{xx} Thirty years later, in those same territories the United States Census Bureau counted 150,000 people of Mexican origin, one-third of whom were probably de-nationalized Mexicans (born in what was formerly Mexican territories), another third were recent immigrants, and the remainder were U.S. citizens of Mexican-born parents (fewer than 5,000 of whom were over 30 years of age).^{xxi}

The Center-North apparently escaped much of the turmoil in the early decades of the Republic to post healthy increases exceeding 1% annually to 1850. This region's share of the national total expanded from one-fourth in 1810 to almost one-third by 1850, but afterwards slowly fell behind. The demographic impact of the War of the Reform and the French Intervention weighed heavily on both the Center and Center-North. These were the most disastrous years for many people of the central states, including Puebla, the Federal District, Zacatecas, Aguascalientes and the state of México itself. Losses in Querétaro and Guanajuato rivaled those of the 1810s and 1820s. Yet considerable growth occurred in Veracruz (which exceeded 2% in the 1860s), Tlaxcala, Michoacán and even Jalisco.

With peace in 1867, Mexico began several decades of soaring demographic growth. Although all regions grew at unusually high rates, the north set most of the records. With the completion of railroads linking Mexico City with Chihuahua in 1882 and Nuevo León in 1888, population growth in the north peaked at 3% per annum. Likewise, Veracruz, freed of bombardments by the Spanish, French and North Americans, and joined to Mexico City by rail in 1872, became a powerful magnet of settlement, averaging 3% growth rates for two decades. Surprisingly the slowest growth, at 1% and less, was in the Center-North while the South registered its highest increases of the century (1-1.5%).

"En México la inmigración ha sido el sueño constante de nuestros gobiernos."

--"Juvenal" (Enrique Chávarri), 1871^{xxii}

The peopling of Mexico has always been a matter of natural growth with little immigration and

the nineteenth century was no exception. Yet this was something of a paradox, given the great waves of immigrants rushing from Europe. Mexico's political leaders made tenacious and at times costly sacrifices to attract immigrants, but their efforts invariably failed. Mexico was already a fairly populous nation. Land was relatively scarce and wages cheap, among the lowest in the hemisphere. Thus, at century's end foreigners constituted less than 0.5% of Mexico's population. Predominantly male, they added little to the nation's demographic potential, and few foreign communities were viable, self-sustaining entities. Almost half of Mexico's 60,000 resident immigrants in 1895 were made up of two Spanish-speaking nationalities, Spaniards and Guatemalans. Most Guatemalan "immigrants", long accustomed to ignoring the poorly defined southern boundary, resided in Chiapas, where they contributed substantially to the state's unusually rapid growth in the last decades of the century.^{xxiii}

Meanwhile Mexican emigration to the United States substantially exceeded foreign immigration to Mexico. At century's end the imbalance increased as the pace of out-migration quickened, rising from 100 thousand Mexicans resident in the United States in 1880 to 125,000 in 1900 and 250,000 in 1910 (1.6% of the population of Mexico in that year).^{xxiv} What is surprising is that the reproductive potential of Mexican emigrants was maximized by an almost perfectly balanced sex ratio. Their offspring effectively doubled the size of the Mexican community in the United States and doubled the demographic drain on Mexico.^{xxv}

Population growth in nineteenth century Mexico was hampered not only by political strife and emigration but also by great epidemics and a multitude of daily perils.

"...las pestes causan pérdidas de hombres que se reparan fácilmente..."
--*Diccionario Universal de Historia*, 1855^{xxvi}

This seemingly callous claim by one of Mexico's many insightful nineteenth century historians contradicts common sense, but researchers are finding that in demographic terms this anonymous author was indeed correct with respect to most epidemics of the early modern world. High pressure demographic systems--where fertility is unrestrained ("natural"), mating of females begins at puberty or shortly afterward, and most women mate--rebound more rapidly from mortality crises than low pressure systems like those of eighteenth century France or England, where a goodly fraction of women never married or married in their late twenties or thirties. Although there are too few case studies to calibrate Mexico's demographic pressure with certainty, it is apparent that in the Bajío, Mexico City, Puebla-Tlaxcala and the Mixteca Alta, mortality crises were typically followed by several years of reduced death rates, heightened marriage rates, and rising fertility.^{xxvii} Consider the great epidemic of "fiebres misteriosas" (typhus?) which struck Mexico City in June and July 1813. According to the parish registers, burials rocketed to 17,267, three times normal levels for this city of 175,000 inhabitants. Nonetheless, demographic recovery began quickly. In 1814, burials declined 75% to 4,365, marriages rose by 25% to 892 and baptisms surged to 4,375 and then 4,717 in 1815.^{xxviii} This epidemic was a great tragedy for the city's residents, yet at the same time the spontaneous response was to mend families disrupted by death, or precipitate new ones, and resume normal procreation. Notwithstanding the shocking increase in deaths, it is important to recognize that no Mexican mortality crisis of the nineteenth century attained the depths of sixteenth century virgin soil epidemics which devastated the indigenous peoples, the infamous Black Death which plagued medieval Europe, nor even the deadly mortality crises of eighteenth century New Spain.

*"Lo que dejó imborrable impresión en mi espíritu
fue la terrible invasión del cólera en aquel año [1833]."*
--Guillermo Prieto, 1906^{xxix}

With political independence, Mexico became loosely linked to a world-wide network of commerce and communication--and communicable disease. Shortly, the world's first great pandemic, Asiatic cholera, struck Mexico. As early as 1831, Mexican authorities, informed of the appearance of the disease in Eastern Europe, commissioned agents to obtain the most enlightened medical advice for containing the catastrophe and monitored the march of the epidemic through Western Europe to Canada and the United States. Finally on May 24th, 1833, as Mexico sank into civil war, cholera erupted in Tampico and then spread along the coast to Campeche (June 24) and inland to Zacatecas (July 14), Guadalajara (July 24), Monterrey (August 4), Mexico City (August 6), and by year's end throughout much of the republic from Oaxaca to Chihuahua. Only Chiapas, where authorities ignored advice that the disease was not contagious and imposed an effective quarantine, was spared.^{xxx} In contrast, most Mexican cities and towns, whose poorly drained streets doubled as latrines, became efficient incubators of the disease. Among Mexico City's 150-175,000 inhabitants, officials tallied 10,332 deaths of 48,863 who contracted Asiatic cholera. The epidemic weighed heaviest on the poor, and possibly more on women than men.^{xxxi} In Guadalajara's city center, where the wealthy resided, death rates were half those of suburban districts.^{xxxii} In the countryside, home to three-fourths of all Mexicans, mortality may have been considerably less. In rural Tlaxcala, with 80,000 inhabitants, the *Diccionario Universal de Historia* reports "only" 1,184 victims.^{xxxiii} Oaxaca City (18,000 residents) recorded some 1,400 deaths while the figure for the entire state (pop. 500,000) was only 9,314.^{xxxiv} The epidemic seems to have died out in the north, before reaching Nuevo México or the Californias. In sparsely settled Chihuahua state the municipio of Hidalgo del Parral reported only 19 cholera deaths among 5,000 parishioners.^{xxxv}

In 1849-50 Asiatic cholera returned to the Republic of Mexico and intermittently to 1903, but these bouts were never as devastating as the great epidemic of 1833, thanks in part to public health and sanitation campaigns to clean filth from streets, provide free health care to the poor, and improve the living conditions of the masses. Notwithstanding the horror evoked by this epidemic, the devastation was probably less than in many of the other great mortality crises of eighteenth century New Spain (1737, 1762, 1797/98) and certainly less than in the year of hunger (1786).^{xxxvi}

"...as a general observation it may be said that the population increases very slowly in Mexico, owing partly to the number of violent deaths which is great beyond belief among the low orders, particularly in the large towns, and partly to the great proportion of deaths in infancy..."

--Richard Pakenham, 1834^{xxxvii}

Minister Pakenham's biting response to a questionnaire from the British Home Office leaves little doubt that mortality was high in the early Republic and violence was no small contributor. Burial statistics for Mexico City in 1852 reports *heridas* as the fifth most frequent cause of death (n=292) after *pulmonía*, *diarrea*, *disenteria*, and *inflamación* (from 449 to 324 cases) but more than *fiebre* or *estómago* (254 and 204 attributions, respectively). The author of these statistics lamented in print that "*debe llamar la atención el número de hombres que perece en riñas*".^{xxxviii}

Evidence of high mortality is exemplified in the family history of the heroine of Independence "Güera" Rodríguez, although no individual can convey the story of an entire nation. First married at age 17, she was widowed three-times. She bore a total of 7 children, but only two survived her death at age 72.^{xxxix} Mexican death registers are not much help either in writing the history of mortality in the nineteenth century. Apparent increases in death rates in the 1820s and 1830s probably reflect nothing more than improvements in the registration of burials. Colonial burial books failed to record most deaths of infants or *párvulos* and a significant fraction of adults. With independence the

recording of infant burials improved greatly, yet parish registers remained grossly deficient, and civil registers only attained acceptable levels well into the twentieth century. As late as 1900 some 14% of adult deaths went unrecorded, according to the demographer Eduardo Arriaga.^{xl} Thus, conventional death statistics are not likely to provide much insight on the real trend of nineteenth century mortality.

Yet, reliable bits of evidence can be pieced together, although the results are unconventional and frail. They point to a measurable improvement in life expectancy over the course of the nineteenth century.

"I have seen no country where families are so knit together as in Mexico, where affections are so concentrated, or where such devoted respect and obedience are shown by the married sons and daughters to their parents."
--Fanny Calderón de la Barca, 1841^{xlii}

Consider the record of parents who survived to the marriage of their offspring--one of a few mortality statistics for the past that can be estimated with some confidence. We know that in 1960, for example, more than four-fifths of Mexican men 25 years of age had a surviving father, and, because Mexican mothers are somewhat younger than fathers, the proportion of surviving mothers was even higher.^{xliii} Just three decades earlier, the record was much worse. As recent as 1930, in the Chihuahuan municipality of Hidalgo del Parral, less than one-half (46%) of fathers were alive when their sons first married, the same fraction as five generations earlier (1804-1813). Yet the similarities are deceptive. A decade of violent revolution compounded by a deadly epidemic of Spanish influenza erased a century of mortality improvements, although only temporarily. Five generations of orphanhood data for Parral, from some 3,000 marriages in parish and civil registers (Figure 3) point to life expectancies at birth of less than 20 years for both males and females at the beginning of the nineteenth century. By 1876-80, conditions were already substantially improved, reaching, 40 years for females and 30-40 for males.^{xliiii}

- Figure 3 -

These fragments for a small locality a thousand kilometers from the demographic center of the nation, fit with other more expansive, but contentious evidence for Guadalajara, Jalisco, and rural Oaxaca (Table 3). There, as well, health conditions improved significantly in the past century, although the window of observation is limited to a few decades and the data defective. It appears that in all regions studied--the city of Guadalajara, rural Jalisco and Oaxaca--life expectancy increased by about 10-12 years (33%) over two generations, and that a small, but not insignificant portion of this improvement (3-4 years or one-third of the total) occurred in the last decades of the nineteenth century. Extending the series back to the middle of the century with statistics collected by Longinos Banda for rural Jalisco reveals life expectancies better than in Oaxaca by a generation. For Jaliscans, life expectancy at age five was 29 years in 1845-54, the level reached by *Oaxaqueños* three decades later.^{xliv}

- Table 3 -

These exotic findings contradict conventional evidence and the widespread impression of Mexican historians that mortality did not improve over much of the nineteenth century.^{xlv} Yet, impressions are inadequate for assessing long-term mortality change. If the puzzle is to be resolved, additional archival research will be necessary. In the meantime, national life tables prepared by Mexican demographers show that by the end of the nineteenth century, life expectancy at birth was only some 25-30 years.^{xlvi} Nonetheless this was probably an improvement of five years or so over conditions during late colonial times. While in 1900 30-35% of infants were dying in the first year of

life (compared with less than 5% in 1980), it still would be wrong to suppose that the rate could never have been higher. According to model life tables, life expectancies of 18-22 years are associated with infant mortality levels of 35-40%. Only modest improvements in nutrition, sanitation, and public health are required to lift a population from these depths.^{xlvii}

The great killers of colonial New Spain--smallpox, measles, typhus, influenza and famine--lost much of their virulence in republican Mexico.^{xlviii} Was this an epidemiological transition, in which lethal monsters metamorphosed into endemic, but more benign, maladies? There is absolutely no evidence of natural selection or the emergence of resistant subpopulations--European, Amerindian, or mestizo--in Mexico or elsewhere in the Americas.^{xlix} Did increased population densities and more frequent communication within Mexico, the Americas and beyond to Europe and Asia lower the fire under the epidemiological stew to a gentle simmer, avoiding the boil-overs common to colonial New Spain? No "año del hambre" like that of 1786 plagued republican Mexico, not even with the doubling and tripling of the population. After independence maize prices probably rose in real terms, but harvest failures leading to the quadrupling of prices, common in Bourbon Mexico, were rare.^l

Smallpox was also brought under control in Mexico, if only near the end of the nineteenth century. Vaccination, when first introduced in Mexico in 1803, aroused militant opposition but nothing like the excesses in Rio de Janeiro where, in 1904, a government ordered vaccination campaign provoked popular insurrection.ⁱⁱ Many smallpox deaths could have been avoided in Mexico over the decades, if political strife and inaction had not obstructed a vigorous vaccination program. Yet, before revolution erupted in 1910 over five million Mexicans had been vaccinated, and deaths from smallpox had been reduced, though not eliminated. The national vaccination campaign begun in 1882, however tardy and incomplete, improved public health and reduced the likelihood of epidemic.ⁱⁱⁱ The trajectory for typhus is similar. By century's end there were fewer typhus deaths per annum throughout the entire nation of 13.6 million people than in the capital alone in 1813 (pop. 175,000).ⁱⁱⁱⁱ Likewise, when cholera invaded the Republic a third time in July 1882, a true prophylaxis was at hand (although the etiology was not established until the following year, when Robert Koch first identified the specific organism, *vibrio comma*). Federal and state authorities effectively quarantined the contagion to Oaxaca, limiting deaths in the entire state to 1,289, a stunning success when compared with the 1,400 deaths in the state capital alone five decades earlier.^{lv} Over the century, a secular decline in mortality occurred as the pestilence of infectious diseases, such as cholera, smallpox, and typhus, abated. Municipal, state, and federal authorities marshalled increasing resources, better intelligence, and effective countermeasures to improve public health and sanitation. Small, but significant improvements in life expectancy in the nineteenth century prefaced the great gains of the twentieth.

"If there has been any movement at all in the true value of the crude birth rate,
it has taken the form of an almost imperceptible but steady decline
since the latter half of the 18th century."
--Woodrow Borah and Sherburne F. Cook, 1974^{lv}

Birth rates were high in nineteenth century Mexico, perhaps 45-55 births per thousand population (Humboldt calculated 65^{lvi}), but determining levels, fluctuations or trends is almost impossible because the degree of error is always greater than any likely differences. Today, Mexican demographers confidently track changes of 2 or 3 points in the birth rate, but in the past deviations of 10-20 points were well within the range of error. As an example, consider one of the longest, most reliable fertility series in the world, that for the Mixteca Alta, stretching from 1700 to 1950. In the first decades of the eighteenth century the rate see-sawed from 45 births (baptisms) per thousand

population to 51 and down to 47 by 1803-4. A rebound to 52 for the years 1820-55 was followed by a slow decline to 49 in 1882 (civil registers), to 46 in 1900, 48 in 1921 and 44 in 1950. Although these not inconsiderable variations amount to 10-20%, they could be nothing more than error.^{lvii} The best estimate of the national crude birth rate in 1900 is 50-54.^{lviii} This should be compared with the official figure of only 36, indicating that perhaps one-third of the nation's births went unrecorded at the beginning of this century.

A glimmer of child-bearing patterns in the Mexican past can be obtained from the exceptionally good records for Tzeltal-speakers in the village of Amatenango (Chiapas). During the years covered by the remarkable genealogies for this community, 1785-1816, fertility was not unexpectedly "natural", with no apparent restraints on procreation. Breast feeding was the only effective contraceptive (not that it was used or recognized as such), and family size was more likely to be limited by absence than abstinence. Birth intervals averaged 3.0 years, and completed family size 8.5 children.^{lix} With better nutrition, earlier weaning and an adequate substitute for mother's milk, birth intervals could have been shortened to perhaps 2.5 years. Under these circumstances family size would have increased to 10 children, but there is no evidence for this in Amatenango or elsewhere in nineteenth century Mexico. On the contrary, the birth intervals of the Tzeltal were almost identical to those of the Euromestizo elite at the pinnacle of wealth in the nation's capital. For women of means who filed wills in Mexico City during the first half of the nineteenth century the average birth interval was 2.9 years, which in twenty-five years of uninterrupted marriage would produce 8.6 children. Thus, the demographic history of the famous Mexican heroine of Independence, *La Corregidora*, who bore a dozen children, was not typical.^{lx} More offspring was often a sign of more "*angelitos*", more infant deaths. The death of a nursing infant prematurely terminated the contraceptive protection from breast feeding and, barring the onset of menopausal sterility, a hasty conception was a common outcome.

If couples from Chiapas to Mexico City and beyond averaged one birth every three years, the historian's problem is reduced to simply determining the frequency and precocity of coupling, including both "*matrimonio del monte*" (cohabitation) and "*matrimonio de la ciudad*" (lawful marriage).^{lxi} Since biological limits on procreation are more restrictive for women than men, we must direct our attention to females. Among Tzeltal women, marriage age averaged 16.1 years with 90% married by age 20. Widow remarriage occurred after a respectable, although short, interval and was common, as frequent as that for widowers.^{lxii} The people of Amatenango, and many other communities in Mexico where indigenous languages were widely spoken, reproduced near a biological maximum, limited by nutritional factors, in turn, determined by the reigning social relations of production. Meanwhile, residents of Mexico City stood at the opposite pole. Marriage age was later (22.7 years in 1811), a significant proportion of women never married (17% of those aged 40 years or more in 1811 were single), and remarriage prospects were slight (40% of women aged 40+ were widowed).^{lxiii} Between the extremes we find the Bajío where mean age at marriage drifted upward from 17.5 years in the 1780s to 18.6 by 1860,^{lxiv} northern Oaxaca (from 16.2 years around 1700 to 18.9 in 1905),^{lxv} and other Spanish-speaking communities, rural or urban.

*"No tengo más recursos que lo de mi trabajo
y vivo en la esperanza que mi hijo se crezca y al llegar a ser hombre,
atendiera a mis necesidades durante mis últimos años con los frutos de su labor."
--23 year old unmarried mother, 1886^{lxvi}*

This Guadalajara mother testifies to the plight of Mexican women. For many, particularly those living in towns and cities (but leaving aside the elite and the tiny, but growing middle class), the

alternative to marriage was poverty. The principal female occupations throughout the nineteenth century--domestic servant, laundress, cook, seamstress, street vendor and prostitute--bought little more than basic necessities and slight security.^{lxvii} Unlike modern Mexico where 95% of women who survive to age 50 will have married or cohabited in more or less stable unions,^{lxviii} in the past a significant fraction lived for years as spinster or widow. Rising illegitimacy rates testify to the many who wagered their sex in a mating game whose prize was more likely a child than a spouse. When the game got rough, custom, law and the courts favored males. Gender crimes--seduction, rape, incest and abandonment--constituted the third most frequent offense, after robbery and homicide, according to crime statistics for Guanajuato in the 1850s.

Yet women, and their defenders, rarely won redress for gender crimes in republican courts.^{lxix} Women's rights suffered a powerful blow in 1803, when a royal edict (*cédula real*) declared that promises of marriage must be written and duly notarized to be legally binding (97 years later female literacy barely topped 13%).^{lxx} Republican legal codes perpetuated this inequity, and then in 1857, the initiation of civil marriage further unsettled women's security in forming and maintaining families. As long as marital stability (that is, coital frequency) is unaffected, whether unions were consecrated by law, religion or custom is of little demographic significance. It seems not unreasonable to suppose that family instability increased substantially in the nineteenth century, although the 1930 census was the first to publish statistics on these various family forms. Marriage prospects were dimmed by severely unbalanced sex ratios. According to the 1900 census 43.3% of Mexican women of marriageable age were single, and among adults there were 10% more women than men. The imbalance was even worse at the state and municipal level and in the cities where there were only 60-70 men per 100 adult women. Figure 4 illustrates how the resulting marriage squeeze worked at the beginning of the century. A 10 point increase in the gender imbalance boosted the proportion of single women to men by an additional 5 points. Men outnumbered women in only four states--Baja California, Coahuila, Chihuahua and Sonora--and in those states the ratio of single women to unmarried men was twenty points below the average. Single adult women ranged from 30% in Guanajuato to 65% in Sinaloa. Census figures on proportions married reflected local conditions and customs more than real rates of union as the variations in Figure 5 attest.

- Figures 4 and 5 -

If "unmarried" meant a life of celibacy then we should find a correlation between fertility and proportions married, but there is none in the census of 1900 ($R^2=.02$, $P>.4$). Nor is fertility correlated with the sexual imbalance, nor even with the percentage of population speaking indigenous languages. We might expect to find no fertility variation at all--since birth control is out of the question for the vast majority of Mexicans in 1900--but this is also not the case. There were five states or entities with fewer than 150 children aged 0-1 per thousand women 12-50 (Colima, the Federal District, Sinaloa, Campeche and Nayarit) while at the other extreme there were four with a ratio of more than 200 (Tlaxcala, Tabasco, Oaxaca and Chiapas). These variations are best explained by literacy, specifically female literacy (Figure 6, $R^2=.20$, $P<.001$; male literacy, on the other hand, was irrelevant; the correlation is small, $R^2=.06$, and statistically insignificant, $P>.09$). The explanation is not that literate women were less fecund, but rather that in states with higher literacy women spent fewer fecund years in conjugal union, by delaying coupling (legal, religious, consensual, or any combination) or not coupling at all. In the Federal District 40% of adult females were literate and the fertility ratio was 131, one-third below the average. Where female literacy was low, say, less than 10% as in Oaxaca, fertility was well above the average. Coahuila was something of an anomaly with "high" female literacy (40%) and fertility almost as high as in Oaxaca (200), but this oddity can be explained by the scarcity of females in Coahuila (11 adult males for 10 females) and a high female

marriage rate (60%). Colima's low fertility was a product of relatively high literacy (32%) compounded by a surplus of females (10:9) and low marriage rate (40%).

- Figure 6 -

To summarize the argument, the number and spacing of children was more or less constant in 19th century Mexico--for those who joined some sort of conjugal union. Variation came in the proportions entering unions, and the precocity in forming unions.^{lxxi} Whether through prudence or poverty, social and demographic mechanisms regulated the age of all forms of marriage or coupling and the proportions ultimately entering conjugal unions. Effective fertility was checked further by the early mortality of spouses and low remarriage or reunion rates, particularly among Spanish-speaking women. Thus, demographic pressure in Mexico was not at its highest in 1900, because a substantial fraction of Mexican women were not in stable unions, and the true proportion varied from state to state. This prudence may have been induced by an absolute scarcity of mates or by a social scarcity arising from high family costs that neither sex could or would bear. Furthermore, visiting or consensual unions provided a discount on the going rate and thereby encouraged more buyers and sellers to enter the market, if only briefly as in the case of the single mother in Guadalajara. After 1930, legal marriage became the widely accepted norm, and thus increased demographic pressures, and the rate of natural increase, to historically unprecedented heights.

Certainly from the beginning of the nineteenth century migration already provided an important escape valve for equalizing pockets of excess demographic pressure in various parts of the country. Mexico City was a demographic sump, where mortality exceeded fertility, and its population could be maintained only by the steady influx of migrants. In 1811, over one-third of its residents were in-migrants, as were two-thirds of young women aged 20-24. Males in search of work were more likely to wander toward mines, farms and the frontier while females flocked disproportionately to towns and cities. Even in colonial times, few women were secluded and many were not even under the protection (or surveillance) of male relatives.^{lxxii} When systematic migration data became available at the end of the 19th century, they show that there were almost as many female migrants as male. Inter-state migration was substantial, and streams for both sexes were almost identical in volume and direction (Figure 7). As in the colonial era a steady seepage of migrants from nearby villages and small towns provided the demographic energy for maintaining the population of Mexico City. In 1900 over one-half of the Federal District's 350,000 inhabitants were in-migrants, most of whom were born in surrounding states. Five states lost 10% or more of their population to out-migration--Mexico, Querétaro, Zacatecas, San Luis Potosí and Aguascalientes. Among entities with in-migrants accounting for 10% or more of the resident population, Coahuila takes second place after the Federal District, followed by Aguascalientes, Durango, Nuevo León, Tamaulipas, Colima, and Morelos. Little movement, either in or out, was recorded in the southern states--Chiapas, Oaxaca, Yucatán--and Guerrero. In half of all states in-migrants made up less than 4% of the population. Thus, as late as 1900, labor markets remained localized. The published data reveal the heavy constraints of the boundaries of federal entities. Finer details would probably show that as late as 1900 the true limits of the job market for the vast majority of workers were those of municipalities.

- Figure 7 -

Urbanization was more incipient than real by the end of the 19th century. If during war years, refugees sought sanctuary in the cities, it is apparent that the effects of their presence were short-lived. In most regional commercial-administrative centers--such as Puebla, Morelia, Zacatecas and even Oaxaca--population scarcely doubled over the course of the century. Mining-administrative towns actually declined in size. Guanajuato's 55,012 inhabitants in 1793 shrank to only 33,488 by 1825,

recovering to 43,000 in 1850. In 1900, Guadalajara edged Puebla as Mexico's second largest city by amassing as few as 101,000 inhabitants (up from 50,000 in 1833). Primate cities and congested regional centers did not exist in nineteenth century Mexico, when most states grew more rapidly than their state capitals.^{lxxiii} Only during the last decades of the century, did industrialization begin to spur urban growth in Monterrey, Guadalajara, Chihuahua, and Mexico City. By 1910, the manufacturing center of the nation was shifting northward toward Monterrey, which stands apart as the classic example of urbanization following industrialization. Yet, Monterrey, despite growth from 14,000 in 1852 to 40,000 in 1881 and 62,000 in 1900, was still a rather modest-sized city at the end of the century. The number of migrants to Monterrey for these years has been estimated at 50,000, yet as of 1900 most could have come from within the state.^{lxxiv} At the close of the century migration fields of Mexican towns and cities were probably stronger than ever, but still remained relatively weak because 80% of the population still lived in communities of less than 5,000 inhabitants. Over three-fourths of the working class continued to depend upon agriculture for their livelihood while three-fourths of the middle class was urban. Mexican cities, despite their small size, offered migrants remunerative labor and a more open, egalitarian class structure.^{lxxv}

Migrants to town and city contributed greatly to urban growth, but their absence from the countryside scarcely left a dent in the much larger rural population pyramid. Due to parcelization and the surge in market agriculture during the last decades of the century, Mexico's haciendas and ranchos became thriving commercial enterprises and multiplied rapidly during the Porfiriato (table 4). From 1850 to 1876 the number of haciendas scarcely increased, but by 1910 there were almost half again as many as in 1877. The great proliferation of ranchos from the middle of the century grew six-fold during the Porfiriato. Successive generations of rancho families were reduced to cottage farmers as a result of relentless fertility and partible inheritance; yet rancheros as a class prospered. Those who failed slipped into tenantry, sharecropping or laboring, often drifting to another settlement, town or state.^{lxxvi}

- Table 4 -

Indian populations languished as ranchos, haciendas, towns and cities grew ever more rapidly, but decline was due as much to mestizaje or assimilation as any failure to reproduce. With the universal repudiation of racial distinctions after independence, the emergence of Mexico's cosmic race can be examined only through extant, but inexact statistics from the beginning and end of the century. By 1895 Afro-mestizos, who numbered one-half million in 1810,^{lxxvii} were more or less thoroughly intermingled and unidentifiable. Indians, according to the ill-defined 1790 count, numbered 2.5 million in central Mexico, which can be compared with 2.4 million who spoke Indian languages in the entire nation in 1895 (and only 2.1 million in 1900).^{lxxviii} If the Indian speaking population had grown at the national average of 1% per annum over the century, it would have numbered 6.5 million in 1895. Since death rates in Indian regions were higher than the national average (Table 3, above), perhaps half of the 4 million loss could be attributed to poor mortality and half to mestizaje or assimilation.

The record of mestizaje in Oaxaca offers some insight into this centuries-old process. Until the end of colonial rule mestizaje proceeded at a glacial pace. As a proportion of total population, Indians in Oaxaca declined from 100% in 1520 to 95% in 1747 and 88% in 1790. A century later there were more Indian speakers in Oaxaca (495,698) than in late colonial times (363,080), but they amounted to only 52% of the total population in 1895, declining to 17% in 1960.^{lxxix} Given the low rates of migration to Oaxaca through 1900, the importance of mestizaje is apparent, but mestizaje was not simply a one-way street. If late colonial rates of intermarriage had persisted over the nineteenth century, the Indian population should have amounted to less than one-third of the total in 1895. That it was almost 50% greater shows that cultural resorption--from, say, Zapotec to mestizo and back--was

a more powerful force than suspected. This suggests that even the relatively moderate to low rates of intermarriage in late colonial times exaggerate the true rate of mestizaje. Passing, in nineteenth century Oaxaca, was still a two-way street. In most other states, ethnic identities were less decisive than in Oaxaca (Figure 8). In only six states did Indians account for 25% or more of the population in 1900--Oaxaca, Chiapas, Guerrero, Campeche, Yucatán, and Puebla--and by 1910, this group was reduced to only 3. From 1900 to 1910, Indians increased their demographic weight in only three entities--Chihuahua, Nayarit, and San Luis Potosí. A greater peril to Indian identity than virgin soil epidemics in the sixteenth century were the vaunted mass education programs of the twentieth. According to official figures, by 1950, speakers of Indian languages numbered only some 800,000. In recent decades a significant resurgence has taken place, reaching 5.2 million in 1980, but these identities may be more fashion than fact.^{lxxx}

- Figure 8 -

Mexico underwent significant demographic growth and transformation in the nineteenth century. The scope and importance of these changes have been unfairly overshadowed by a rosy picture of late colonial times (to 1810) and the threatening tones used to depict pre-revolutionary Mexico (to 1910). In the nineteenth century cultural or racial demographics which had flourished through the end of colonial rule were displaced by regional hybrids of authentically Mexican stocks. Linguistic diversity declined, erasing differences in marriage patterns and family forms. As late as 1810, marriage and coupling differed greatly from one racial or cultural group to another in terms of the precocity and likelihood of conjugal union even in the heart of the viceroyalty, Mexico City. While at the beginning of the century Indian women were more likely to mate and marry at younger ages than "*españoles*" (Euromestizos), by century's end these differences were smaller, more regional than racial, and less cultural than classist. There was no typical Mexican family in colonial times because the vagaries of marriage, fertility and mortality led to much greater variation than at the beginning of the twentieth century. Today, even more families cluster near the norm thanks to almost universal marriage and to great advances in controlling mortality and fertility.

A century ago, quasi-continental migration fields, strengthened and expanded by political independence, reduced regional isolation and ultimately linked South to North, coast to highlands, and all to Mexico City. With independence also came a heightened public regard for health and sanitation. To control cholera and smallpox, first state, then national authorities accepted responsibility for these matters, although mortality improvements in the past century pale in comparison with those of the twentieth. The demographic revolution of twentieth century Mexico--and ultimate transition to slow growth in the twenty-first--was preceded by a high pressure demographic system inherited from colonial times. With independence, the system began to lose steam, as declining death rates were counter-balanced by increasingly fluid marriage patterns, slowly easing birth rates, and greater spatial mobility and social homogeneity. In the twentieth century these forerunners of demographic transition accelerated enormously.

Tables.

Table 1. The Peopling of Mexico, 1790-1910

year	Mexico Total population	South	Center Regions: % of Total	Center-north	North
1790	4795871	20.2	46.1	26.3	7.4
1800	5458810	20.0	47.4	24.7	7.9
1810	6238293	19.8	48.6	23.2	8.4
1820	6175621	18.8	44.0	26.3	10.9
1830	6389486	17.5	40.5	28.8	13.1
1840	7160669	16.7	39.9	29.8	13.6
1850	7567884	16.1	40.0	31.9	12.0
1860	8280916	14.8	42.3	31.1	11.8
1870	8749775	14.7	41.5	31.5	12.2
1880	9933547	14.3	42.1	30.8	12.8
1890	11539943	13.9	42.4	30.0	13.7
1900	13607268	13.7	42.8	28.0	15.5
1910	15160372	13.9	43.1	26.4	16.5

Regions:

South: Yucatán (and Quintana Roo), Oaxaca, Chiapas, Tabasco, and Campeche

Center: México, Distrito Federal, Tlaxcala, Veracruz, Puebla, Morelos, Hidalgo, Michoacán, Guerrero

Center-North: Jalisco (and Nayarit), Colima, Guanajuato, Aguascalientes, Zacatecas, San Luis Potosí, Querétaro

North: Durango, Sinaloa, Sonora, Baja California (Sur and Norte), Chihuahua, Coahuila, Nuevo León, Tamaulipas and until 1848 Alta California, Nuevo México and Texas

Note:

To obtain continuous population estimates for areas subject to changing boundaries, I extrapolated backward from the first date at which population figures are known for both states, applying a constant ratio. Thus, Aguascalientes accounted for 23.7% of the combined population of Aguascalientes and Zacatecas in 1837. At earlier dates, when figures for Aguascalientes were included with those for Zacatecas, 23.7% was assigned to the former and 76.3% to the latter. For 1790 and 1810, in two instances, Chiapas and Tabasco, no censuses are known to have been carried out. Ratios were computed from figures for neighboring states (Oaxaca and Yucatán, respectively), but estimates for these base states were not adjusted.

The complete set of decadal estimates was then obtained by exponential interpolation.

Sources:

Abbreviations: B+N - as cited in Brachet and Nettel (1976) and cross-checked with INEGI (1986), 91 entries; INEGI (1986), 16 entries; Kicza (1981), 12 entries; DUHG - 14 entries from Alamán et al. (eds.), *Diccionario Universal de Historia y de Geografía* followed by volume and page ("s" - supplementary volumes); *Memoria* - state or federal government report, 51 entries as cited elsewhere; BSMGE - *Boletín de la Sociedad Mexicana de Geografía y Estadística*, 5 entries. For comprehensive listings of sources see: Brachet and Nettel (1976), INEGI (1986), Kicza (1981), and Urías Hermosillo and San Juan Victoria (1982).

General: 1790, INEGI (1976), 18 entries; 1810, Navarro y Noriega in Kicza (1981), 18 entries; 1895, 1900 and 1910, official census publications, 98 entries.

Aguascalientes: 1790 and 1810 23.7% of Zacatecas; 1837 Durán in INEGI; 1850 DUHG 1:7; 1856 García Cubas in B+N; 1862 Durán in B+N; 1873 Mejía in B+N.

Baja California: 1810 32% of Californias; 1851 Orozco y Berra in B+N; 1861 Pérez Hernández in INEGI; 1884 García Cubas in INEGI.

Campeche: 1790, 1810 and 1835 11.35% of Yucatán; 1846 DUHG 3s:974; 1861 *Memoria* in INEGI; 1874 *Memoria* in B+N.

Coahuila: 1790 10% of San Luis Potosí; 1849 DUHG 2:350; 1869 *Memoria* in B+N; 1872 *Memoria* in B+N; 1889 *Memoria* B+N.

Colima: 1790 and 1810 10% of Michoacán; 1830 *Memoria* in B+N; 1846 BSMGE (1850) 4:256; 1856 Orozco y Berra in B+N; 1871 *Memoria* in B+N.

Chiapas: 1790 24% of Oaxaca (unadjusted); 1829 *Memoria* in B+N; 1851 *Memoria* in B+N and DUHG 2:681; 1871 *Memoria* in B+N; 1884 García Cubas in INEGI.

Chihuahua: 1790 48% of Durango; 1803, 1823, 1832 Archivo Histórico de Hacienda (Archivo General de la Nación) 117:344 in B+N; 1810 48%; 1839 *Memoria* in B+N; 1857 Hermosa in INEGI; 1872 *Memoria* in B+N.

Distrito Federal: 1790, 1810, 1838 INEGI p. 24; subtracted from the state of Mexico; 1857, 1869, 1879 Romero in Kicza (1981).

Durango: 1790 and 1810 less 48% to Chihuahua; 1826 *Memoria* in B+N; 1839 *Memoria* in B+N; 1850 Orozco y Berra in B+N; 1871 *Memoria* in B+N.

Guanajuato: 1790 and 1810 79%; 1830 *Memoria* in INEGI; 1845 *Memoria* in B+N; 1849 DUHG 3s:712; 1868 *Memoria* in INEGI; 1877 Busto in B+N.

Guerrero: 1857 Hermosa in B+N; 1871 *Memoria* in INEGI; 1880 Busto in B+N.

Hidalgo: 1869 *Memoria* in B+N; 1877 Busto in B+N.

Jalisco (includes Tepic/Nayarit to 1910): 1830 Banda in B+N; 1846 *Memoria* in B+N; 1852 DUHG 4:367; 1862 Banda in B+N; 1877 Busto in B+N.

Mexico (less Mexico City): 1830 *Memoria* in B+N; 1852 *Memoria* in B+N; 1870 *Memoria* in B+N; 1877 Busto in B+N.

Michoacán: 1790 and 1810 (less 10% for Colima); 1828 Durán in B+N; 1839 *Memoria* in B+N; 1856 Hermosa in B+N; 1868 BSMGE (1869), 374-5; 1877 Busto in B+N.

Morelos: 1870 *Memoria* in B+N; 1877 Busto in B+N.

Nuevo Leon: 1790 (10.5% of San Luis Potosí), 1804, 1828, DUHG 3s:38; 1839 *Memoria* in B+N; 1854 Orozco y Berra in B+N; 1869 *Memoria* in B+N; 1877 Busto in B+N.

Oaxaca: 1790 (100%) INEGI (1976); 1824 *Memoria* in B+N; 1830 Valdes in B+N; 1839 *Memoria* in B+N; 1855 Orozco y Berra in B+N; 1868 BSMGE (1869) 328; 1872 *Memoria* in B+N; 1883 *Memoria* in B+N.

Puebla: 1825 *Memoria* in B+N; 1839 *Memoria* in B+N; Orozco y Berra in B+N; 1872 *Memoria* in B+N.

Querétaro: 1790 and 1810 21% of Guanajuato; 1822 BSMGE (1852), 221; 1830 Valdes in B+N; 1850 *Memoria* in B+N; 1869 *Memoria* in B+N; 1877 Busto in B+N.

Sinaloa: 1790 and 1810 60% of Sonora; 1839 *Memoria* in B+N; 1872 *Memoria* in B+N; 1877 Busto in B+N.

San Luis Potosí: 1790 less 36.5% for Coahuila, Nuevo León and Tamaulipas; 1828 DUHG 3s:329; 1839 *Memoria* in B+N; 1853 DUHG 3s:332; 1877 Busto in B+N.

Sonora: 1790 and 1810 40% from Sonora; 1838 Gomez de Cortina in Kicza (1981); 1850 *Memoria* in B+N; 1877 Busto in B+N.

Tabasco: 1790 and 1810 10% of Yucatán; 1823 and 1839 *Memorias* in B+N; 1855 Orozco y Berra in B+N; 1869 *Memoria* in B+N; 1877 Busto in B+N.

Tamaulipas: 1790 16% of San Luis Potosí; 1827 Valdes in B+N; 1837 *Memoria* in B+N; 1856 Orozco y Berra in B+N; 1869 *Memoria* in B+N; 1877 Busto in B+N.

Tlaxcala: 1824 Valdes in B+N; 1836 DUHG 3s:599; 1856 Orozco y Berra in B+N; 1868 BSMGE (1869), 160-163; 1877 Busto in B+N; 1886 Velasco in INEGI.

Veracruz: 1830 Valdes in B+N; 1839 *Memoria* in B+N; 1855 Orozco y Berra in B+N; 1871 *Memoria* in INEGI; 1884 García Cubas in INEGI; 1877 Bustos in B+N.

Yucatán: 1810 (less 10% for Tabasco and 10.35% for Campeche); 1846 *Memoria* in DUHG 3s:974; 1854 DUHG 3s:998; 1869 *Memoria* in B+N; 1877 Busto in B+N.

Zacatecas: 1790 less 23.7% for Aguascalientes; 1810 less 23.7%; 1832 *Memoria* in B+N less 23.7%; 1838 *Memoria* in B+N; 1854 Orozco y Busto in B+N; 1868 Busto in B+N.

Territories ceded to the U.S.A. in 1848: Alta California, Nuevo México, and Texas: 1790, 1810 and 1838 from Kicza (1981); 1848 projection.

Table 2. Population of Federal Entities, 1790-1910

South					
Year	Yucatán	Campeche	Tabasco	Chiapas	Oaxaca
1790	364621	41321	52870	98721	411336
1800	387796	49021	55422	103749	495267
1810	412445	58157	58098	109169	596326
1820	415187	61034	55592	114588	514507
1830	417947	64053	58518	121424	457504
1840	420726	72707	63919	138595	501844
1850	302912	83337	67421	158194	517780
1860	241445	86166	73964	174667	561350
1870	283239	86000	84488	192145	642447
1880	287302	86215	99170	226099	722520
1890	293789	86912	121163	281241	817785
1900	309652	86542	159834	360799	948633
1910	348722	86661	187574	438847	1040398
Center					
Year	Veracruz	Puebla	Tlaxcala	Michoacán	Federal District
1790	163539	566443	59148	260383	104760
1800	174377	677898	71256	304127	115897
1810	185935	811285	85845	355220	128218
1820	212411	651894	71336	391138	151726
1830	242658	610950	72271	435281	179545
1840	259463	661524	81524	497537	207887
1850	316237	657757	86818	493867	220623
1860	381094	669786	98218	527581	228739
1870	454083	698486	121665	621986	235285
1880	536823	788391	140272	683563	358534
1890	717595	907645	158538	813225	433344
1900	981030	1021133	172315	935808	541516
1910	1132859	1101600	184171	991880	720753
Year	México	México	Morelos	Guerrero	Hidalgo
1790	1058096				
1800	1244450				
1810	1463626				
1820	1239771				
1830	1050153				
1840	1145759				
1850	1250068				
1860	1324608			275532	
1870	1393377	650720	150384	294806	407827
1880		717971	155251	348893	451808
1890		795899	156272	393491	516235
1900		934463	160115	479205	605051
1910		989510	179594	594278	646551

Table 2 (continued).

Center North							
Year	Aguascalientes	Zacatecas	San Luis Potosí	Colima	Jalisco	Guanajuato	Querétaro
1790	34040	109431	153953	28931	505428	339800	90327
1800	33192	108892	163505	33791	511514	393425	104581
1810	32366	108357	173651	39469	517674	455514	121086
1820	42999	155418	234510	42534	583138	449171	117714
1830	57125	222918	302390	45838	656881	442916	114437
1840	72193	274380	326559	53389	691397	591401	122962
1850	81193	278444	377730	61365	764613	719360	132124
1860	86759	289338	424471	63079	833984	725245	149821
1870	88848	311057	471124	65572	914227	742541	169239
1880	93567	359691	515637	61647	1019012	826505	186722
1890	99359	415929	546226	57314	1162326	968141	211344
1900	102416	462190	575441	65115	1303989	1061724	232389
1910	120511	477556	627800	77704	1380028	1081651	244663
North							
Year	Durango	Chihuahua	Coahuila	Nuevo León	Tamaulipas	Sinaloa	Sonora
1790	64387	59433	24228	29000	38660	56038	37358
1800	77068	71139	32253	38893	46825	67468	44978
1810	92248	85152	42937	50509	56715	81231	54154
1820	125028	106095	49595	70125	69434	99666	72799
1830	153810	132189	57287	90914	84151	122285	97864
1840	160187	147600	66171	103561	96915	147596	127586
1850	137793	147600	76143	131620	104703	153700	147133
1860	158576	153442	84666	155599	109396	160056	144120
1870	182495	174638	94851	175772	112732	166674	141169
1880	219745	203981	129950	210295	153171	179506	146447
1890	265933	239803	186628	271129	184957	227940	173690
1900	370294	327784	296938	327937	218948	296701	221682
1910	483175	405707	362092	365150	249640	323642	265383
Year	Baja California	Alta California		Texas/Nuevo México			
1790	4076	8590		30953			
1800	5751	12172		34087			
1810	8117	17250		37539			
1820	8158	19817		50225			
1830	8200	22766		67200			
1840	8243	29120		89912			
1850	8285						
1860	9677						
1870	15264						
1880	24849						
1890	36075						
1900	47624						
1910	52272						

Table 3. Life Expectancy at Age 5 in years (both sexes combined)

	1880	1900	1950
Oaxaca (rural)	29	33	40
Jalisco (rural)	34	37	47
Guadalajara	37	39	47
Republic of Mexico	..	39	55

Sources: Cook and Borah (1974, 2:398 figure 7.7) and Mier y Terán (1982, 2:196).

Table 4. Rural properties in Selected States: 1850, 1877, 1910

	haciendas			ranchos		
	1850	1877	1910	1850	1877	1910
Aguascalientes	37	48	38	288	464	468
Chihuahua	123	123	222	166	596	2408
Colima	20	29	40	96	225	292
Jalisco	391	385	471	2585	2646	7465
Morelos	49	48	40	69	53	102
Sum	620	633	811	3204	3984	10735
República	5100*	5832	8421	10500*	15201	48590

Sources: For 1854, *Apéndice al Diccionario Universal de Historia y Geografía*; * note that my approximations for the republic in 1854 differ greatly from Guerra's 6092 haciendas and 15085 ranchos, 1985 2:486). 1877 and 1910: Tutino Table D.1.

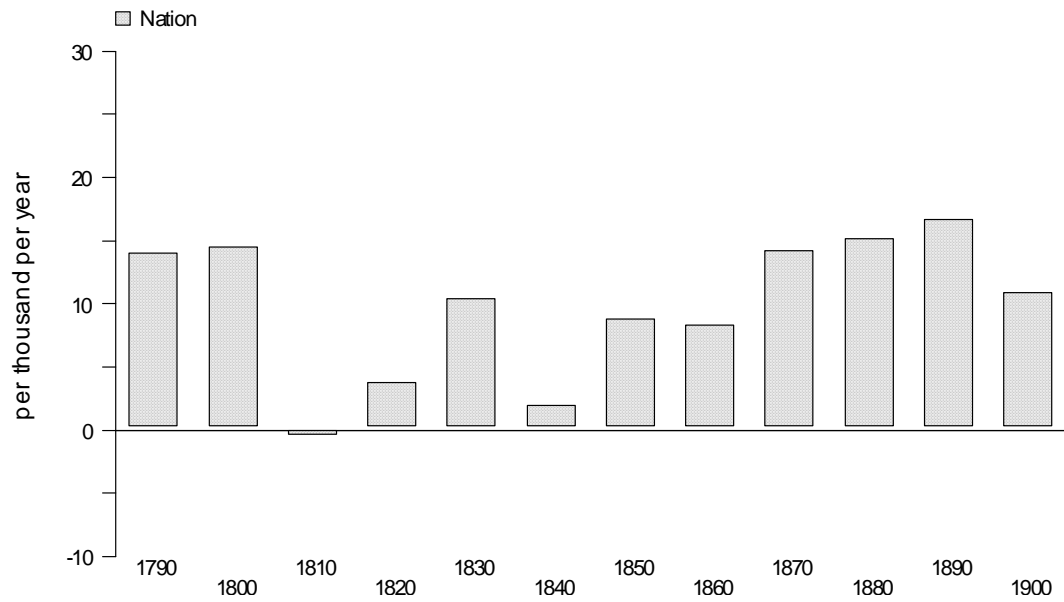


Figure 1. Population Growth Rates By Decade: Mexico, 1790-1910 (See Table 1).

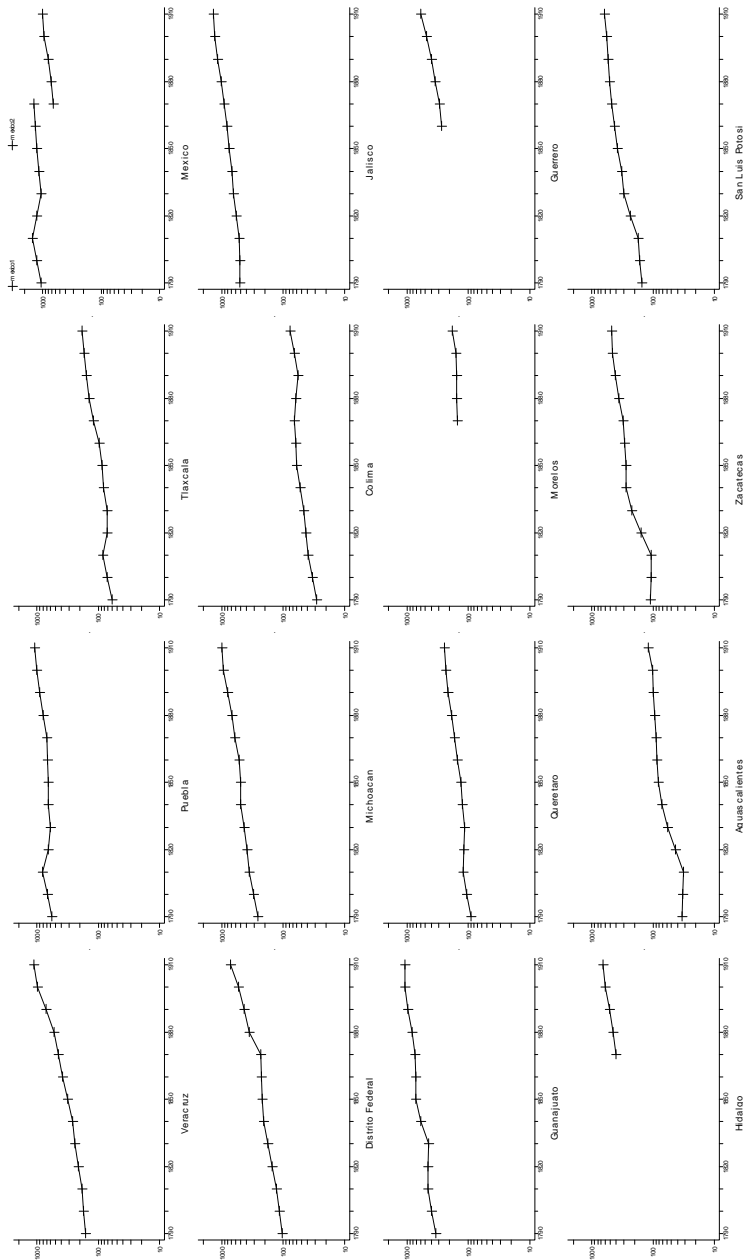


Figure 2a. Peopling of the Center and Center-North by Federal Entity (See Table 2).

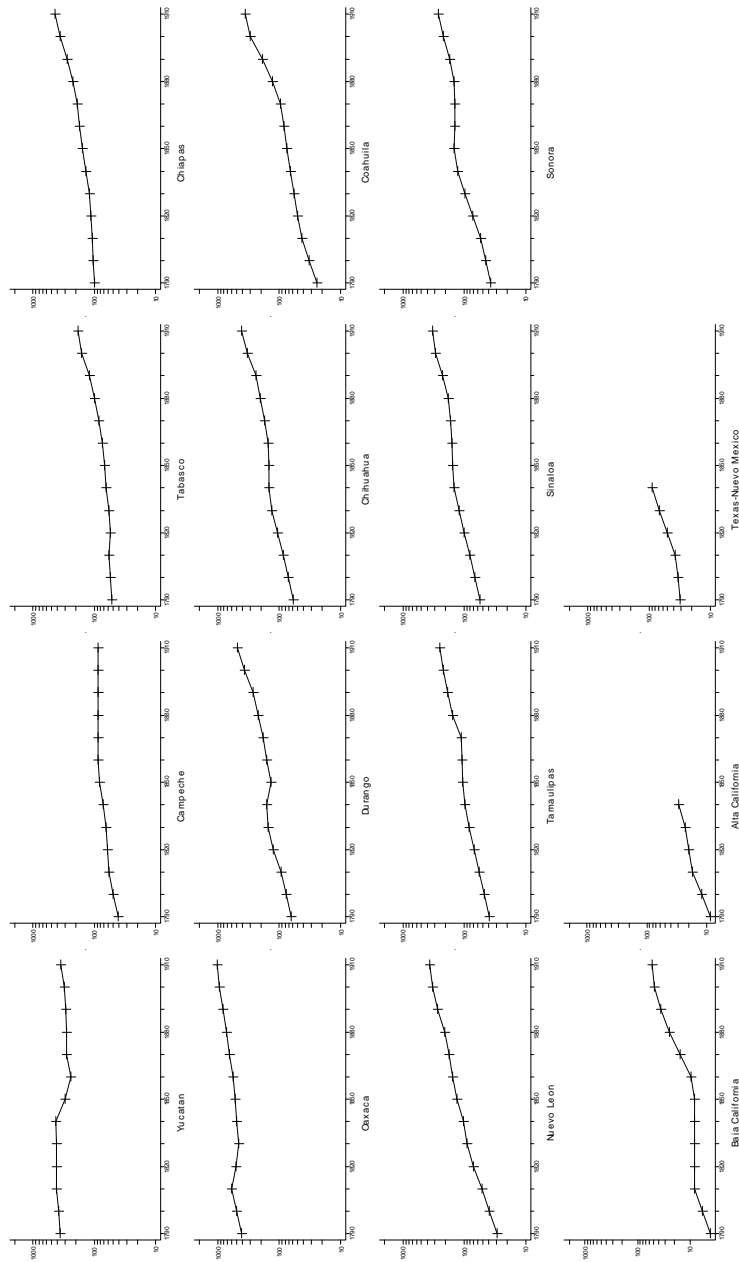


Figure 2b. Peopling of the North and South by Federal Entity (See Table 2).

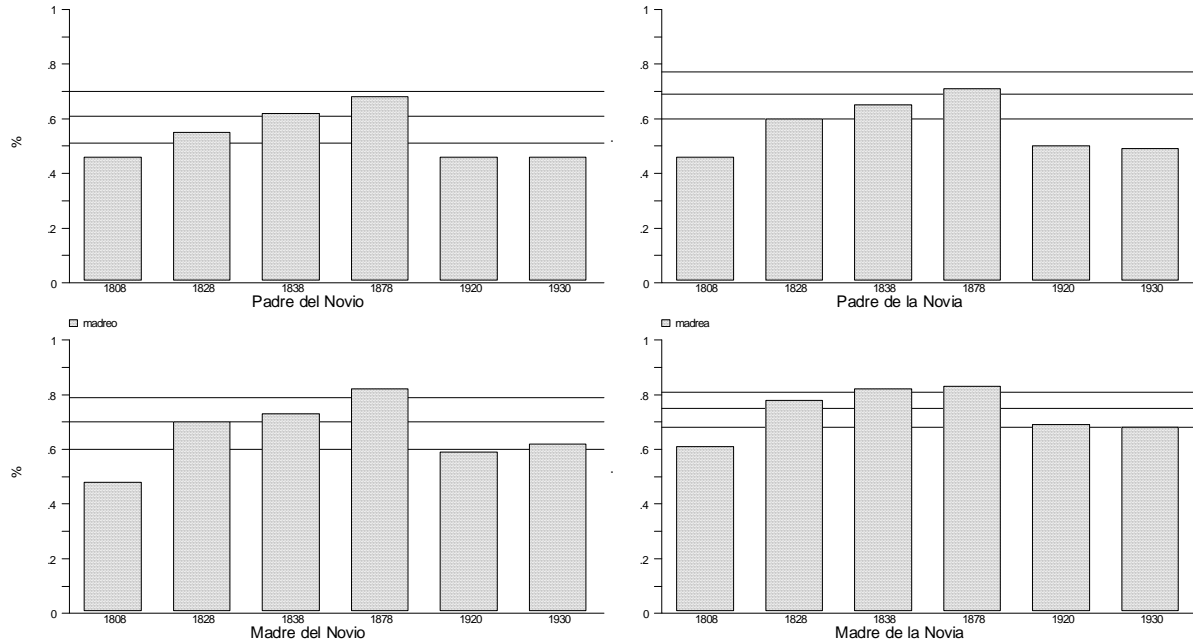


Figure 3. Percentage of parents surviving at the marriage of their children. Hidalgo de Parral, Chihuahua; 1808, 1828, 1838, 1878, 1920, and 1930
Father of the groom, Father of the bride, Mother of the groom, and Mother of the bride (first marriages of legitimate offspring)

Note: Horizontal lines indicate life expectancy at birth of 20, 30 and 40 years, respectively, taking into account sex and mean age at marriage. Refers to mortality experienced up to three decades preceding marriage year. See text for additional details.

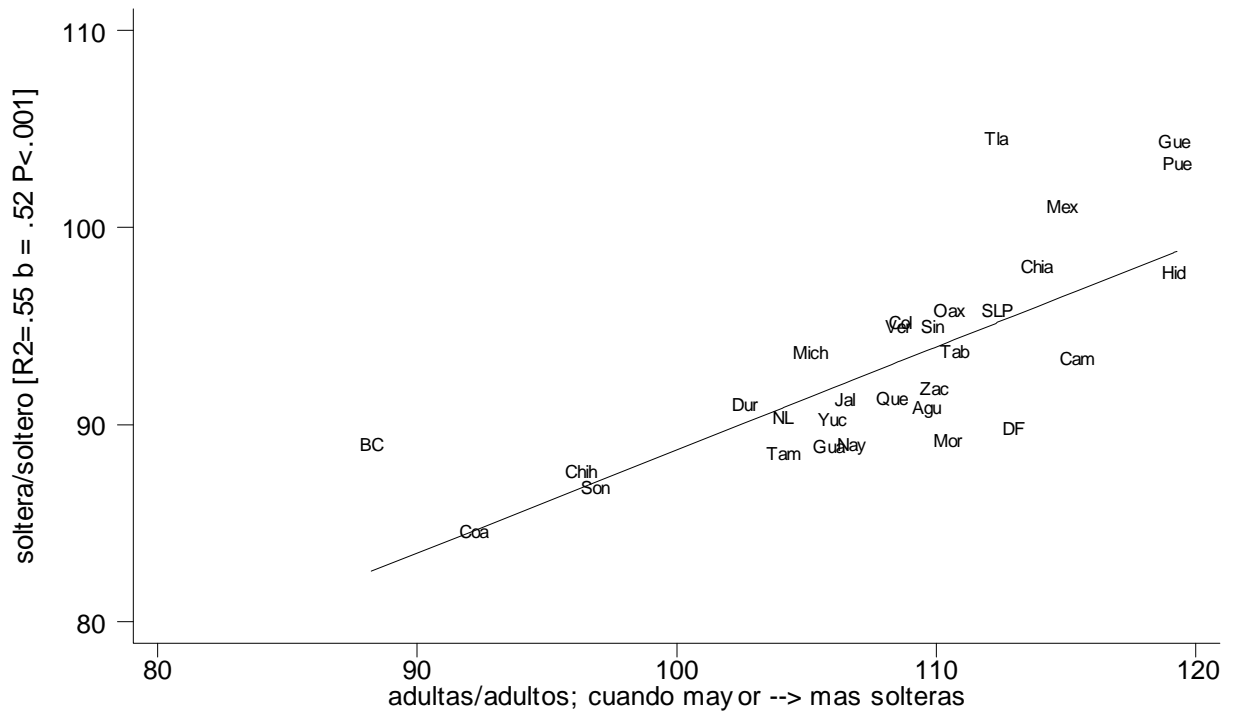


Figure 4. Surplus of females means higher percentages of unmarried: Federal Entities, 1900

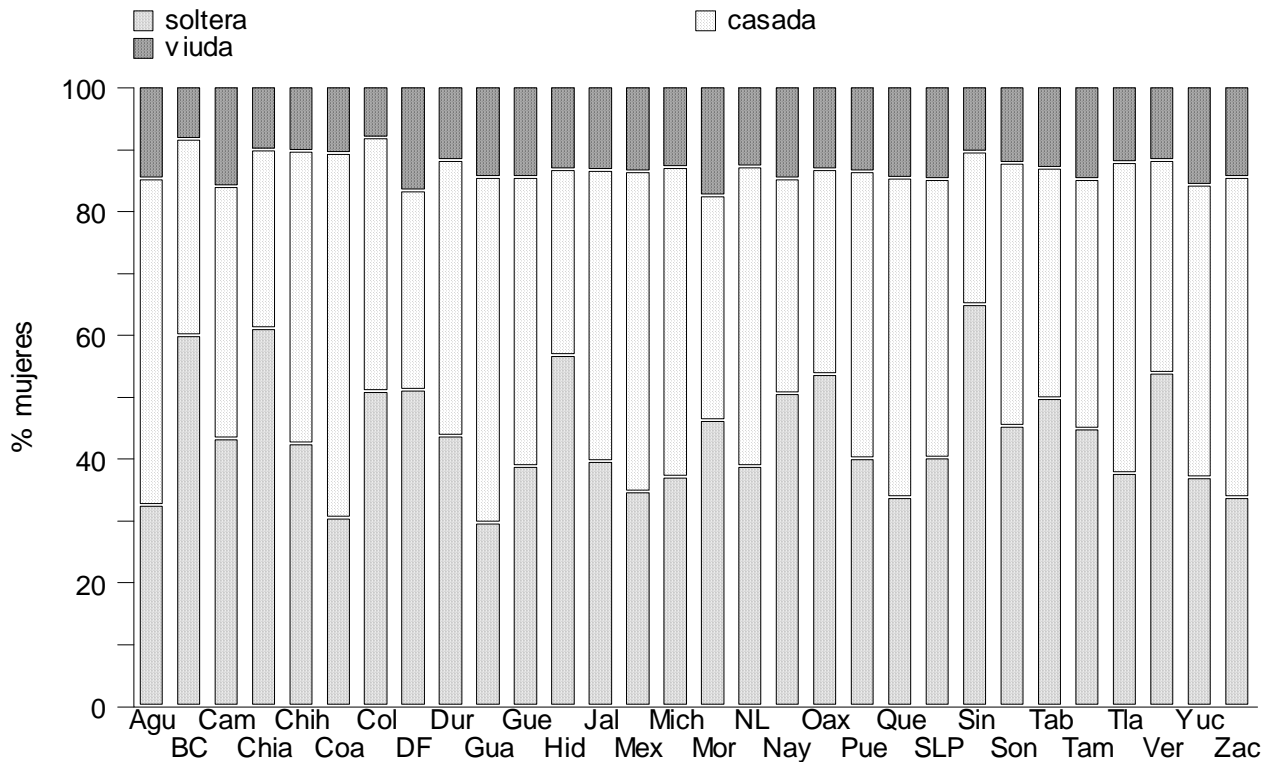


Figure 5. Female Marital Status (% Single, Married, Widowed) by Federal Entity, 1900.

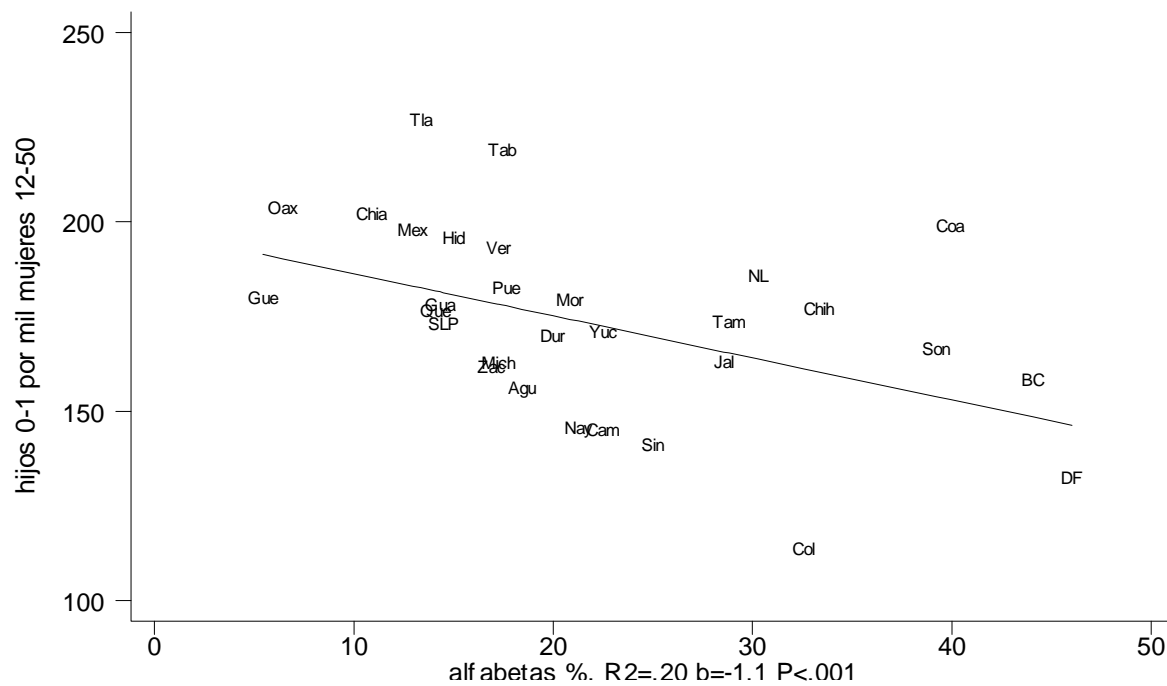


Figure 6. Higher female literacy is associated with lower fertility: Federal Entities, 1900.

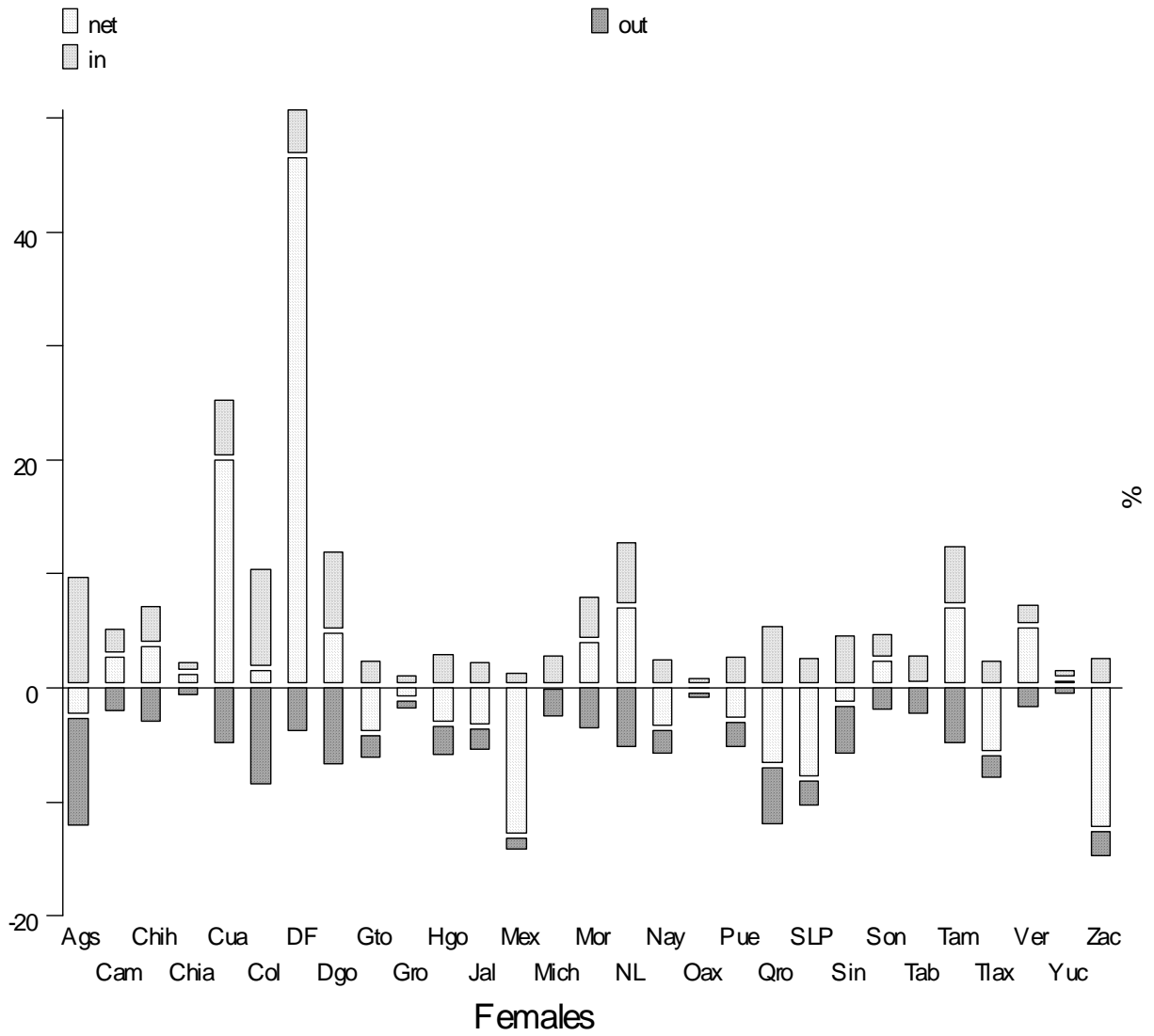


Figure 7a. Migration by Federal Entity: Females

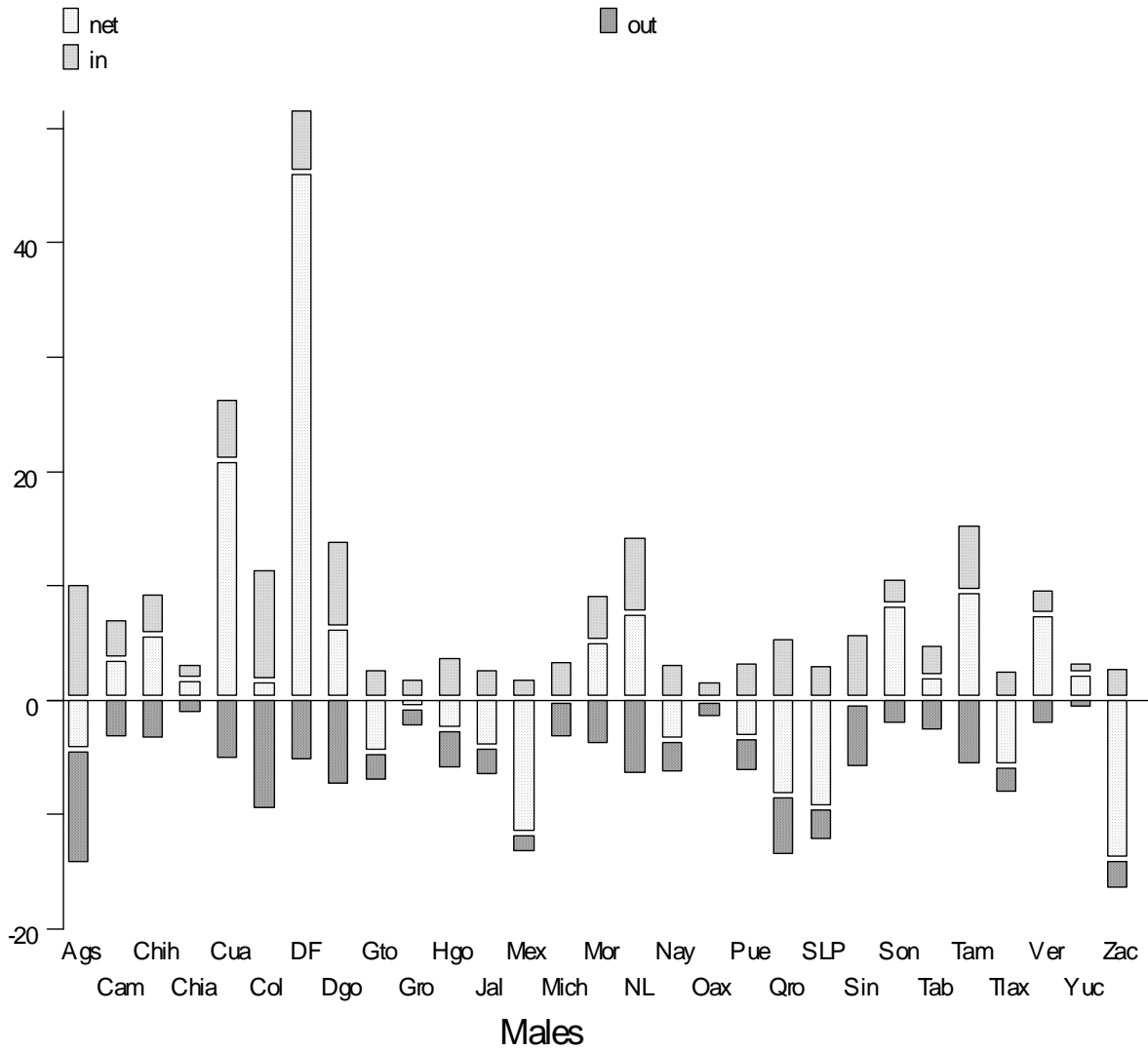


Figure 7b. Migration by Federal Entity: Males

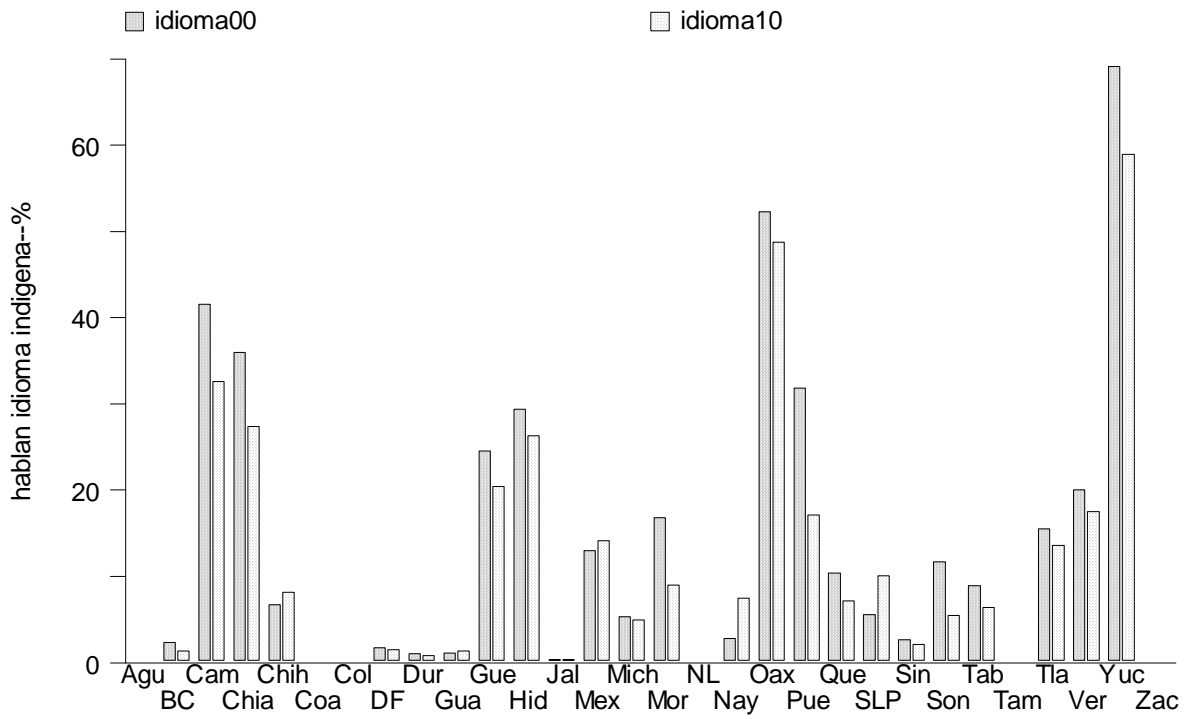


Figure 8. Percent of Population Speaking an Indigenous Language by Federal Entity 1900 and 1910

Notes.

- * This essay was commissioned by the Consejo Nacional de Población and an abbreviated Spanish translation published in *El poblamiento de México. Una visión histórico-demográfica* (Mexico, D.F., 1992). The author thanks Prof. Moisés González Navarro for his critical reading of an early draft and the Consejo Nacional de Población for permission to publish the complete English text.
- ⁱIn Cosío Villegas (1955, 3:125) we read that "*la gente de México es escasa y crece con lentitud*". The idea of slow growth was inherited from nineteenth century writers who contrasted what they considered Mexico's enormous natural resources with the poverty of its population. "*Todos [los autores] coinciden en estas opiniones; nadie parece dudar de que la nación cuenta con un territorio excepcionalmente fecundo y, al mismo tiempo, con un pueblo impotente numérica y culturalmente hablando*" (3:133).
- ⁱⁱAguirre Beltrán (1972), 277.
- ⁱⁱⁱCosío Villegas (1957), 4:51; see also statistics reported in Arriaga (1968), 210.
- ^{iv}*Estadísticas Históricas Mexicanas* (1984), 1:7-33. M. Urías Hermosillo and C. San Juan Victoria (1982) review many of the 19th century population figures and, in the unpublished version of their paper, provide an enormously helpful bibliography.
- ^vUsing figures from the original published source, wherever possible, reduces errors in determining the reference year. For example the population of Colima in 1871 was 65,827 according to a report published in 1873 yet in Cosío Villegas (1955, 3:125), citing Antonio García Cubas in *Memoria de la Secretaría de Fomento* (1877), the figure is attributed to 1877. Searching original sources in state and local archives will ultimately produce a remarkably sound foundation for the population history of 19th century Mexico and its regions.
- ^{vi}Navarro y Noriega (1820). Contemporaries who attempted to update estimates from parish registers failed to recognize that parish burial registers were seriously deficient, and thus, invariably over-estimated population growth (noted by Kicza 1981).
- ^{vii}Brachet and Nettel (1976); Kicza (1981); *Estadísticas Históricas Mexicanas* (1984).
- ^{viii}México. Dirección General de Estadística (1977).
- ^{ix}Lerner (1968).
- ^xThe 1895 census counted both de jure and de facto populations; later censuses use only de facto criteria. I subtracted inhabitants listed as "absent" from the 1895 figures.
- ^{xi}*Diccionario Universal de Historia* (1853-1855), particularly volume 3 of the appendix edited by Orozco y Berra.
- ^{xii}Mitchell (1975).
- ^{xiii}Sanchez-Albornóz (1974), 169.
- ^{xiv}Aguirre Beltrán (1972), 212; Cook and Borah (1974), 1:82.
- ^{xv}Calvo (1973); Morin (1972); Rabell and Necochea (1987); Malvido (1973); Brading (1978); Reher (1990). For estimates of the Indian population from tax records, see Ouweneel (1991).
- ^{xvi}*Apéndice al Diccionario Universal de Historia* (1855), v.3 (supp.):999.
- ^{xvii}*Apéndice al Diccionario Universal de Historia* (1855), v.3 (supp.):38.
- ^{xviii}Navarro y Noriega (1820).
- ^{xix}My figure of 422,403 for 1846 comes from a state *Memoria* (subtracting 82,232 for Campeche).

For 1854, the *Apéndice al Diccionario Universal de Historia* (1855), v.3 (supp.):974 reports 217,223. While the smallpox epidemic of 1826-27 caused 49,000 deaths and cholera took 52,000 victims in 1833, the official figures seem to ignore these (*Apéndice al Diccionario Universal de Historia* 1855, v.3 supp.:999).

Kicza (1981) accepts Jesús Hermosa's figure of 680,000 for Yucatán and Campeche in 1857 and then Antonio García Cubas' 263,547 for Yucatán alone in 1862, yet the effects of the caste war should have been apparent by 1857.

Gonzalez Navarro (1972:172) mistakenly transcribed the figure for 1854 as 117,223 and then computed a density of 1.29 inhabitants per square kilometer, instead of 2.38. In the *Apéndice al Diccionario Universal de Historia* (1855, v.3 supp.:998) the correct total is reported as 217,223 with 91,229 in Mérida, 67,423 in Izamal, 35,505 in Tekax, and 23,066 in Valladolid.

^{xx}These are my projections based on growth rates in the 1820s before hostilities began.

^{xxi}University of Minnesota Social History Research Laboratory public use sample of the 1880 census of the United States. My tabulations are from a preliminary 1/200 national sample.

^{xxii}Cited in Cosío Villegas (1955), 3:135.

^{xxiii}*Censo de 1895* (Chiapas, 31); Bowman (1987). Only 5,820 resident Guatemalans were enumerated in the 1900 census, down from 13,705 in Chiapas in 1895 (*Censo de 1900*, 44).

^{xxiv}The 1880 U.S. Census data counter the notion that the first emigration of Mexicans to the United States began in the Porfiriato (Alba, 1977:18).

^{xxv}United States Census Bureau computerized samples of enumeration sheets for 1880, 1900 and 1910 available at the Social History Research Laboratory, University of Minnesota. My tabulations are from national samples, with sampling fractions of 1/200, 1/750 and 1/250, respectively.

^{xxvi}*Apéndice al Diccionario Universal de Historia* (1855), v.3 (supp.):999.

^{xxvii}See note 16.

^{xxviii}Maldonado (1976).

^{xxix}Cited in Oliver Sánchez (1986), 13.

^{xxx}Hutchinson (1958), 3-23. Marquez Morfín (1991) offers the most detailed analysis of the effects of epidemics for this period.

^{xxxi}Hutchinson (1958), 160.

^{xxxii}Oliver Sánchez (1986), 95.

^{xxxiii}*Apéndice al Diccionario Universal de Historia* (1855), v.3 (supp.):599.

^{xxxiv}Hutchinson (1958), 163, note 161.

^{xxxv}Burials registers, San Jose del Parral.

^{xxxvi}Cooper (1965), 186, note 1; Brading (1978), 189.

^{xxxvii}Gilmore (1957), 226.

^{xxxviii}*Diccionario Universal de Historia* (1853), 5:779-780.

^{xxxix}Arrom (1985), 127.

^{xl}Arriaga (1968), 169.

^{xli}Cited in Arrom (1985), 130.

^{xlii}Camposortega (1988), 253-259.

^{xliii}Hidalgo del Parral parish and civil marriage registers for 1804-1813, 1824-31, 1832-42, 1876-80, 1919-23, 1928-32. For other applications of this method see McCaa (1985 and 1991a) and Rabell

and Necochea (1987).

^{xliv}Cook and Borah (1974), 2:398, 405; and Mier y Terán (1982), 2:196.

^{xlv}Cosío Villegas (1957), 4:43; the Mexican demographer Francisco Alba (1990, 206) concurs that mortality probably declined during the last half of the Porfiriato.

^{xlvi}Mier y Terán (1982), 1:252; Alba (1990). The Benítez Zenteno-Cabrera (1967) life tables imply slightly better life expectancies for the nineteenth century.

^{xlvii}Coale and Demeny (1983).

^{xlviii}Cooper (1965), 186; the nineteenth century burial series for Mexico City in Maldonado (1976); Brading (1978), 184-189; unpublished data collected from parish and civil burial registers for Hidalgo del Parral, 1700-1932.

^{xlix}Halberstein (1974).

^lBrading (1978), 195.

^{li}Needell (1987) discusses the revolution which erupted when compulsory vaccination was introduced in Rio de Janeiro in 1904.

^{lii}Cooper (1965), 195-66; Cosío Villegas (1957), 4:70.

^{liii}Cooper (1965), 177; Cosío Villegas (1957), 4:66.

^{liv}Cosío Villegas (1957), 4:55.

^{lv}Cook and Borah (1974), 2:321.

^{lvi}Cook and Borah (1974), 2:297.

^{lvii}Cook and Borah (1974), 2:296.

^{lviii}Mier y Terán (1982), 320, ff.

^{lix}Klein (1986).

^{lx}Arrom (1985), 124-127.

^{lxi}Aguirre Beltrán (1972), 249.

^{lxii}Klein (1986).

^{lxiii}Arrom (1985), 111-117; McCaa (1990); Anderson (1984) finds that in Guadalajara 30-33% of the adult female population was widowed. The proportion was high not only because of differential mortality which favored females but also because widows were drawn to a growing city, where work was more readily available for women.

^{lxiv}Brading (1978), 49. The rising age at marriage can be traced to the beginning of the eighteenth century in neighboring San Luís de la Paz (Rabell Romero, 1978).

^{lxv}Cook and Borah (1974), 2:278-280.

^{lxvi}Cited in Brennan (1978), 93.

^{lxvii}Arrom (1985), 157-201; Thompson (1991). Ramos Escandón (1990, 29, 35) argues that employment opportunities for women did not expand with industrialization. In textile factories, for example, modernization meant more male workers. Stagnation and decline was partially due to ideological considerations which increasingly constricted what constituted women's work.

^{lxviii}Quilodrán (1974).

^{lxix}*Diccionario Universal de Historia* (1853-1855), 3:718. Arrom (1985), 304, note 33.

^{lxx}The history of courtship, particularly the role of young women, is virgin territory. In Parral colonial authorities were not uniformly hostile to appeals for justice by jilted women--until 1804

(McCaa 1991a). Judicial authorities in Medellín (Nueva Granada) warmly embraced the 1803 edict as justification for refusing to receive complaints of seduction raised by women of ordinary backgrounds (Rodríguez, 1991).

^{lxxi}Non-marital fertility declined over the nineteenth century in Hidalgo del Parral municipio as the proportion of non-married women rose; meanwhile marital fertility remained stable (McCaa, 1989). In the twentieth century, for the nation as a whole, the earliest phase of fertility decline was disguised by the declining proportion of women who never married nor entered stable unions (Zavala de Cosío, 1988).

^{lxxii}Arrom (1985), 105-107.

^{lxxiii}Davies (1972), Moreno Toscano (1972).

^{lxxiv}*Estadísticas Históricas Mexicanas* (1984); Lorey (1990). In 1900 only 13% (44,068) of the residents of Nuevo León were migrants from other states (*Censo de 1910* vol. 34:1-17). .

^{lxxv}J. E. Iturriaga, *La estructura social y cultural de México* (México: Fondo de Cultural Económica, 1951 p. 28) as cited in Wilkie (1981), 578.

^{lxxvi}Tutino (1986), table D.1; Brading (1978), 143-144.

^{lxxvii}Aguirre Beltrán (1972, 237) places the figures at 168,000.

^{lxxviii}Aguirre Beltrán (1972), 237 indicates only 1.1 million in 1790. *Censo de 1900* (34:71).

Whether differences between 1895 and 1900 were real or the result of changing definitions is not clear.

^{lxxix}Cook and Borah (1974), 2:265; *Censo de 1895*, Oaxaca 74-77, 153-157.

^{lxxx}*Estadísticas Históricas Mexicanas* (1984) 1:109-111. It is likely that the 1950 figure is too low and the 1980 figure too high, if conventional criteria from previous censuses had remained in vogue.

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