

Chinese on the American Frontier, 1880-1900:  
Explorations Using Census Microdata, with Surprising Results  
(Extended Abstract / Prospectus – PAA'04)

The population history of the Chinese in late 19<sup>th</sup> century America is almost familiar enough to be taken for granted. It is the history of a virtually all-male immigrant community, toiling in the face of harsh challenges, both physical and political. It is the story of explosive growth during the 1849 Gold Rush, and the shift from mining to farming and railroad construction, and then from rural to urban settlement. Finally, with the indignity of Chinese Exclusion in 1882 and the prohibition of racial intermarriage, it is a prolonged history of population stagnation, aging, and decline. This latter account of an “aging bachelor society” frames most historical and social analyses of Chinese Americans in the late 19<sup>th</sup> century. Yet because only scant population data have been available until now, it is a framework that has remained largely untested and, as we shall see, could in certain respects turn out to be wrong.

In this paper we use newly available data from the Integrated Public Use Microdata Sample (IPUMS (Ruggles et al. 1997)) to explore the demography of Chinese Americans on the Western frontier. We focus on the period from 1880 to 1900, which spanned the beginning of the Chinese Exclusion Acts, a series of laws that (with minor exceptions) embargoed Chinese immigration. The handful of existing treatments of the Chinese American population during this era (e.g., Lee 1960, Saxton 1971) have relied on printed census volumes, with their gaping omissions of detail (the published 1880 census, for example, does not break out Chinese by age and sex) or their high levels of aggregation (the published 1900 census, for example, combines Chinese with Japanese). Our broad goal is to construct a more revealing demographic portrait than past data have permitted, with particular attention to the demographic tenability of the “aging bachelor hypothesis.”

## DATA and METHOD

Data for this study are drawn from the Integrated Public Use Microdata Sample (IPUMS). The IPUMS integrates representative samples of census manuscripts drawn from nearly every American census since 1850 (Ruggles et al. 1997). Our analyses use extract files of Chinese person and household records in the 1880 and 1900 samples. The 1880 sample comprises 1,221 persons (101 female) at a sampling interval of 1-in-100. The 1900 sample, created with a wider 1-in-760 sampling interval, is considerably smaller at 153 persons (12 female). (A sample is not available for 1890 because the census manuscripts for that year were destroyed in a fire.)

Our analysis will include two components. First, we will use tabulation and simple descriptive statistics to explore Chinese American population stock and how it changed from 1880 to 1900. We will focus on population size, composition (age, sex, nativity, industry or occupation, household type) and distribution (throughout the states, and by urban-rural settlement). Variables collected from the 1880 and 1900 census manuscripts are shown in Appendix A.

Second, we will use population simulation to investigate population dynamics, with a particular focus on assessing the degree to which migration rates imputed through the projections correspond with official immigration records and the demographic regime implied by the aging bachelor model. This will extend an earlier investigation that covered the entire span of Exclusion (1882-1943) though in less depth (Chew and Liu, forthcoming). Our present effort is a more intensive investigation of a shorter period.

We start with the population enumerated in 1880, at the census immediately preceding the imposition of Exclusion (Table 1 and Figure 1). The structure is clearly that of a hyper-masculine, prime laboring age population. The largest age cohorts falls in the intervals 25 to 34. Were we to project the 1880 population for 20 years, by 1900 we would expect the peak in cohort sizes to be at ages 45 to 54. Considering the force of Exclusion and the near

impossibility of family formation, this projection would reflect mainly the effects of aging and mortality. This is the demographic regime implied by the aging bachelor hypothesis, and so we undertake the exercise here.

We incorporate one refinement concerning migration, however, because in the year or so leading up to the imposition of Exclusion in late 1882, the Chinese were keenly aware that the door of free immigration was about to be slammed shut. In the ensuing rush of immigrants, recorded entries rose from 5,802 in 1880 to 11,802 in the following year, and then to 39,579 in the first nine months of 1882. By 1883, the first full year under Exclusion, arrivals tapered sharply to 8,031, and then from 1884 through 1900, official records show a complete absence of immigration. We added this final pre-Exclusion wave of entrants to the launch year population for our 1880-1900 projection, using the strong assumption that all immigrants subsequently remained in the U.S. for the entire projection period. As only their gross numbers were published, we distributed the immigrants by age and sex according to the pattern pertaining to arrivals in 1902, the closest year for which age and sex were published. The record for 1902 shows:

Age and sex of Chinese immigrants, 1902	
Total immigrants:	1,631
Male:	97%
Aged less than 14:	2%
Aged 14 to 45:	92%
Aged 45 and over:	6%

Within the broad age categories provided in the 1902 record, the distribution of immigrants was further shaped to resemble the age composition of Chinese in the 1880 census. In short, after taking an educated guess about the composition of the post-1880 immigrants, we added them to the launch year (enumerated 1880) population. A range of mortality and fertility scenarios was devised by combining estimated vital rates for whites and non-whites in the total U.S.

during this period (Chew and Liu, forthcoming). Cohort-component projection was then applied with launch year 1880 and target year 1900.

#### POPULATION DYNAMICS: PRELIMINARY RESULTS

One representative result is shown in Table 2 and Figure 2. This target year (1900) population results from projection under a combination of high (non-white) mortality and low (white) fertility. Aside from the persistence of a hyper-masculine sex ratio, its most notable feature is the overall aging of the population, centering around the peak in cohort sizes at ages 45 to 54, which then transitions abruptly to a conspicuous near-absence of men at younger ages. This then, is the result that the aging bachelor hypothesis leads us to expect.

The population structure presented by the 1900 census is entirely another matter. The Chinese actually counted in the 1900 are shown in Table 3 and Figure 3. Even while recognizing potential for error or bias in census measurement (Chew and Liu, forthcoming), the enumerated and the projected 1900 populations are strikingly different. Most importantly, the enumerated population is younger. The peak in age concentration falls at 35 to 39, 10 years younger than the peak for the projected population. Although not as young in overall complexion, because of its concentration among the prime ages for manual labor, the 1900 census population more strongly resembles the 1880 pre-Exclusion population than an aging bachelor society.

What should be made of this surprising persistence among men in the prime working ages? One obvious implication is that migration, most likely in the form of worker exchange, assumed far greater importance than either conventional historiography recognizes or the official records admit (Chew and Liu, forthcoming). To the extent that this might have been true, life in Chinese American communities must have been more outwardly oriented, toward systematic (if not institutionalized) worker exchanges with China, than previously thought. Our intention in this paper is to outline the demographic elements of such a system of exchange and explore their ramifications for Chinese communities on the Western U.S. frontier.

## REFERENCES

Chew, Kenneth S. Y. and John M. Liu. "Hidden in Plain Sight: Global Labor Force Exchange in the Chinese American Population of the 19<sup>th</sup> and Early 20<sup>th</sup> Centuries." Accepted for publication in *Population and Development Review*.

Lee, Rose Hum 1960. *The Chinese in the United States of America*. Hong Kong: Hong Kong University Press.

Ruggles, Steven and Matthew Sobek et al. 1997. *Integrated Public Use Microdata Series: Version 2.0*. Minneapolis: Historical Census Projects, University of Minnesota.  
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Saxton, Alexander. 1971. *The Indispensable Enemy*. Berkeley: University of California Press.

Table1. Enumerated 1880 population

Enumerated 1880 Chinese Americans		
	Male	Female
0 to 4	1,710	610
5 to 9	710	410
10 to 14	2,010	1,010
15 to 19	9,910	510
20 to 24	14,710	2,110
25 to 29	22,510	1,410
30 to 34	22,010	1,110
35 to 39	12,710	1,210
40 to 44	12,810	910
45 to 49	4,810	310
50 to 54	4,210	310
55 to 59	1,810	210
60 to 64	1,710	10
65 to 69	510	10
70 to 74	110	110
75 to 79	110	10
80+	110	10
Total	112,470	10,270
Grand total	122,740	

Figure 1.

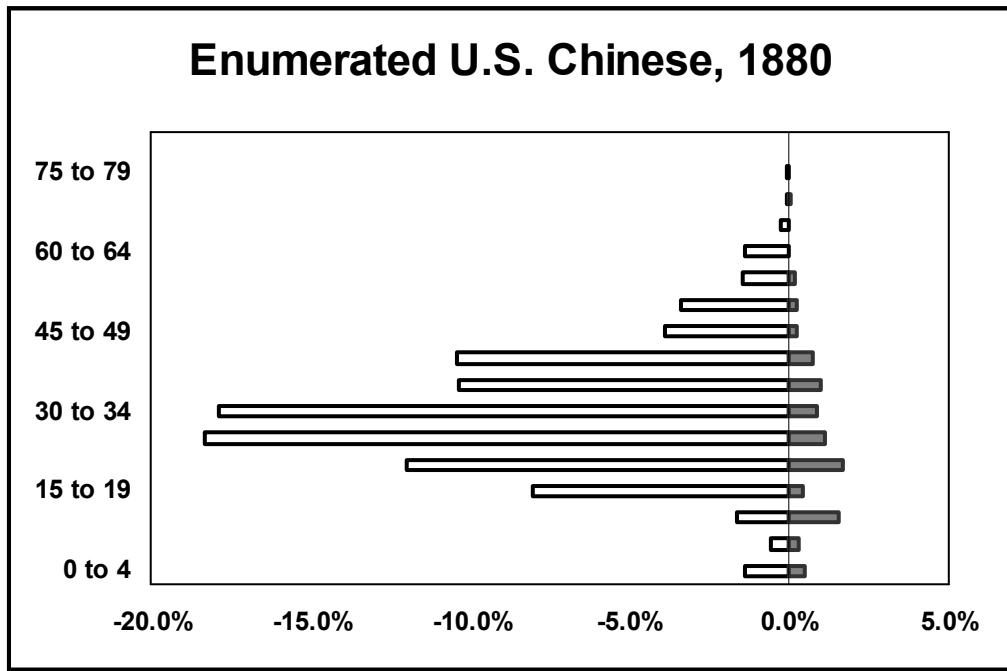


Table 2. Projected 1900 population  
with recorded 1880-1900 Chinese immigration

High Mortality, Low Fertility, plus Recorded Immigration Scenario		
	Male	Female
0 to 4	970	940
5 to 9	1,180	1,130
10 to 14	1,610	1,530
15 to 19	2,000	1,880
20 to 24	1,660	470
25 to 29	760	330
30 to 34	2,030	780
35 to 39	11,940	500
40 to 44	17,440	1,710
45 to 49	24,440	1,270
50 to 54	22,080	1,010
55 to 59	11,690	900
60 to 64	10,130	630
65 to 69	2,520	160
70 to 74	1,650	120
75 to 79	60	60
80+	370	10
Subtotals	112,530	13,430
Grand total	125,960	

Figure 2.

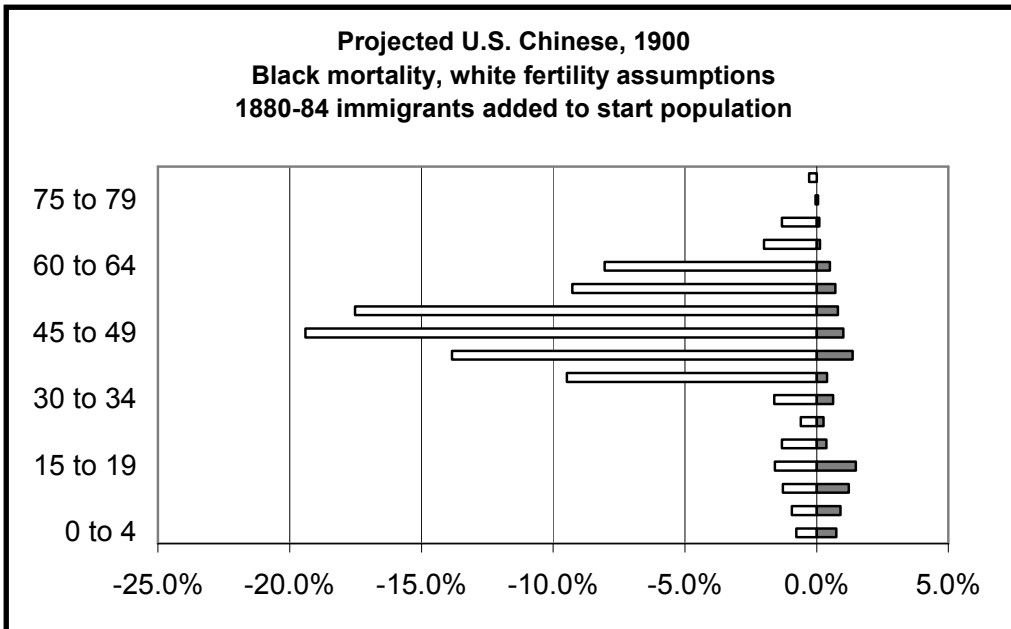
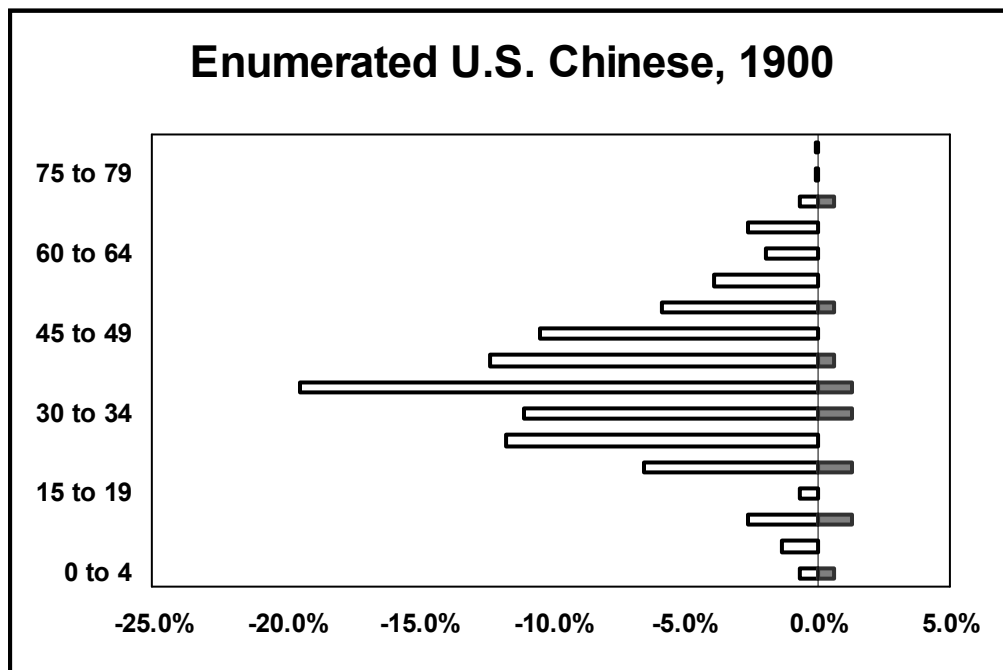


Table 3. Enumerated 1900 population

	Male	Female
0 to 4	840	840
5 to 9	1,600	80
10 to 14	3,120	1,600
15 to 19	840	80
20 to 24	7,680	1,600
25 to 29	13,760	80
30 to 34	13,000	1,600
35 to 39	22,880	1,600
40 to 44	14,520	840
45 to 49	12,240	80
50 to 54	6,920	840
55 to 59	4,640	80
60 to 64	2,360	80
65 to 69	3,120	80
70 to 74	840	840
75 to 79	80	80
80+	80	80
Subtotals	108,520	10,480
Grand total	119,000	

Figure 3.





Appendix A. Selected Variables in the 1880 and 1900 IPUMS

(Variables present in both censuses except as noted)

HOUSEHOLD RECORD

Number of persons in household  
Census region, state, county, civil division, metropolitan area (detailed), city  
Size of place and urban-rural status  
Group quarters status and type  
Farm status  
Number of families, married couples, mothers, fathers in household

PERSON RECORD

Relationship to household head, detailed  
Family interrelationships (e.g., number of own children in household)  
Age  
Sex  
Race, detailed  
Birthplace, detailed  
Mother's and father's birthplaces, detailed  
Nativity  
Year of immigration and years in the U.S. (1900 only)  
Literacy  
Labor force status, 1950 basis  
Industry, 1950 basis (1880 only)  
Months unemployed previous year  
Occupational income score (constructed)  
Duncan Socioeconomic Index (constructed)  
Name, first and last (1880 only)  
Surname similarity ["persons within any household who shared a surname will have the same code"(IPUMS codebook)](1880 only)

Source: Ruggles et al. (1997)