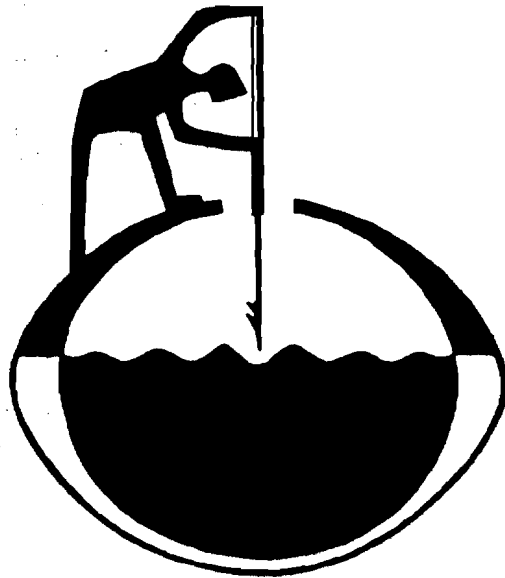


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Changes in Population Structure In the Aleutian Islands

DOROTHY C. JONES



INSTITUTE OF SOCIAL, ECONOMIC
AND GOVERNMENT RESEARCH

UNIVERSITY OF ALASKA

Fairbanks, Alaska

CHANGES IN POPULATION STRUCTURE IN THE ALEUTIAN ISLANDS

Federal and state policies for village Alaska commonly reflect the assumption that Native villages are disappearing because of high rates of emigration. Arnold, in a detailed analysis of village Alaska, found that, contrary to this assumption, most Alaska villages are persisting and some are increasing in population.¹ There is, however, a dearth of detailed information on village population changes over extended time periods that would reveal precisely what is happening to the population structure of Alaska villages. Such information is essential to the formulation of effective policies for village Alaska; for example, family planning policies.

This research note presents data on changes in population structure in four of the six remaining villages in the Aleutian Islands over a 73 year period.² The data are derived from an 1897 household census by C.L. Hooper,³ 1940 and 1944 household censuses by the Bureau of Indian Affairs, and a 1970 household census by the author.

Gross population data for the four villages since 1897 reveal a fluctuating pattern of change (Table 1). In any of the four villages, each decade may reveal a reverse trend from the previous decade. These fluctuations appear to reflect two conditions: the health of the local economy and the effects of attendance at outside high schools.

Population changes appear to be clearly related to the state of the local economy. In all villages except Akutan, the decline in sea otter hunting at the end of the nineteenth century was accompanied by a corresponding decline in population. The economic situation in Akutan differed from that in other villages in that sea otter hunting was quickly replaced with the establishment of a cod station in 1904 and a whaling station in 1912. Conversely, at the height of fox hunting in the Aleutians in the 1920's, each of the villages except Unalaska experienced a population increase. The population decline in Unalaska in that period probably reflects the lack of access to favorable fox hunting grounds. At present, the two villages that virtually lack employment opportunities, Atka and Nikolski, have the highest rates of population decline.

¹Robert D. Arnold, "Village Alaska," in *Alaska Natives and the Land* (Anchorage: Federal Field Committee for Development Planning in Alaska, 1968), pp. 37-84.

²There are currently 12 Aleut villages: six are in the Aleutian Islands, four in the Alaska Peninsula-Shumagin Island area, and two in the Pribilof Islands.

³C.L. Hooper, *A Report on the Sea-Otter Banks of Alaska* (Washington: Government Printing Office, 1897).

TABLE 1.

Percentage Change in Population from 1897 to 1970
in Atka, Akutan, Nikolski, and Unalaska¹

Year	Atka Population % > or <	Akutan Population % > or <	Nikolski Population % > or <	Unalaska Population % > or <
1897	128	59	98	246
1920	56 56%<	66 12%>	83 15%<	299 21%>
1930	103 84%>	71 8%>	109 31%>	226 24%<
1940 ²	81 21%<	74 4%>	92 16%<	174 23%<
1950	85 5%>	86 16%>	64 30%<	173 0
1960	119 40%>	107 24%>	92 44%>	218 26%>
1970	76 36%<	90 16%<	62 33%<	190 13%<

¹To insure comparability of data throughout the paper, we have used household census data for the years 1897, 1940, and 1970 in this table. For the remaining years, we have used U.S. Bureau of the Census data.

²Bureau of Indian Affairs data for Atka were secured in 1944.

³This figure reflects only the Native population and whites married to Natives. There are an additional 90 white residents in Unalaska. Until the 1960's, the white population in Unalaska was insignificant. There are only a few white residents in the other three villages.

The growing prevalence of attendance at outside high schools also appears to influence population changes in the Aleutians. Until the 1960's, high school attendance was desultory, but, during the 1960's, it became widespread. A large proportion of high school students, especially those who graduate, do not return to the villages. Some who do return are dissatisfied with the low level of community services and facilities and ultimately emigrate. Additional factors, about which data are lacking, may also influence population changes in the villages, but the economic and educational factors appear clearly important.

Gross population trends do not necessarily reveal changes in village population structure. The most striking change in Aleut population structure in the twentieth century is the attrition in the 20-40 age group (Table 2). If data from only two time periods—1897 and 1970—are examined, this shrinkage appears even more clear-cut (Figure 1). Each village shows a sharp decline in the child-breeding age group. This decline reflects the large emigration rates in the young adult population. Emigration data are unavailable for any but

TABLE 2.

Percentage Distribution of Age Groups in Atka, Akutan, Nikolski,
and Unalaska, 1897, 1940, and 1970

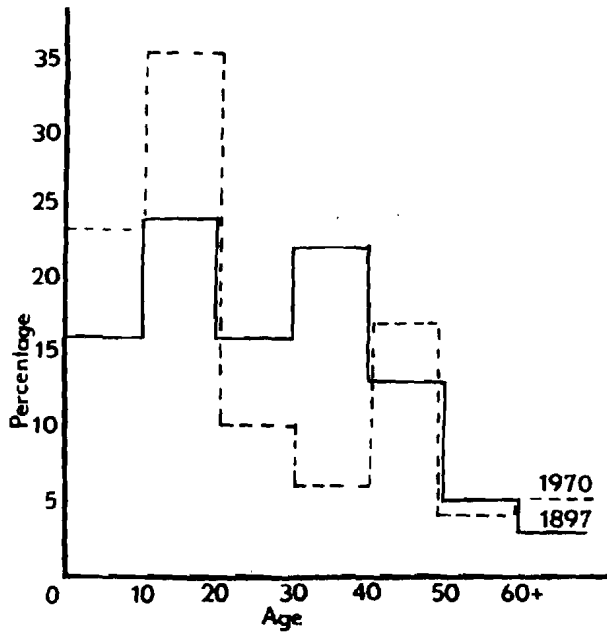
<u>Atka</u>			
Age Group	1897 (N=128) Per cent	1940 (N=81) Per cent	1970 (N=76) Per cent
0- 9	16	21	23
10-19	24	31	35
20-29	16	17	10
30-39	22	9	6
40-49	13	11	17
50-59	5	5	4
60+	3	5	5
<u>Akutan</u>			
Age Group	1897 (N=59) Per cent	1940 (N=74) Per cent	1970 (N=90) Per cent
0- 9	29	31	25
10-19	19	21	25
20-29	24	20	10
30-39	12	13	8
40-49	7	13	10
50-59	5	1	12
60+	4	0	9

TABLE 2. (Continued)

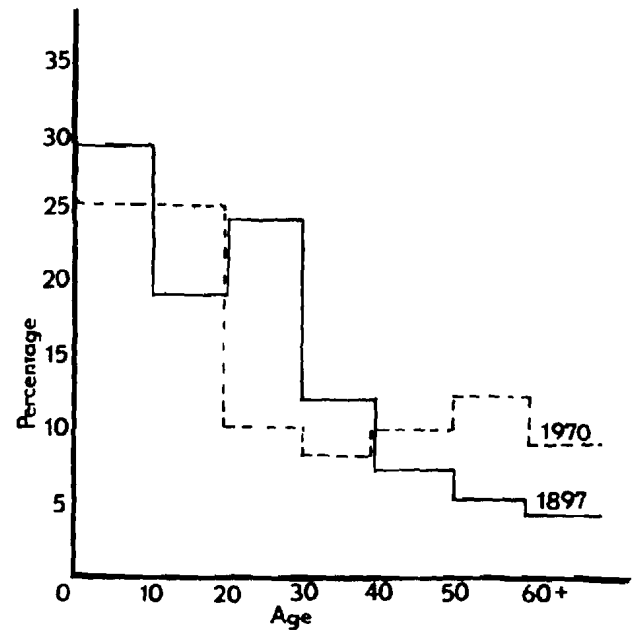
<u>Nikolski</u>			
Age Group	1897 (N=98) Per cent	1940 (N=92) Per cent	1970 (N=62) Per cent
0- 9	18	23	18
10-19	19	24	16
20-19	23	18	12
30-39	18	16	15
40-49	14	7	13
50-59	3	4	12
60+	3	6	12

<u>Unalaska</u>			
Age Group	1897 (N=249) Per cent	1940 (N=174) Per cent	1970 (N=190) Per cent
0- 9	22	27	24
10-19	15	25	27
20-29	20	12	12
30-39	21	15	14
40-49	14	12	13
50-59	4	5	5
60+	4	3	4

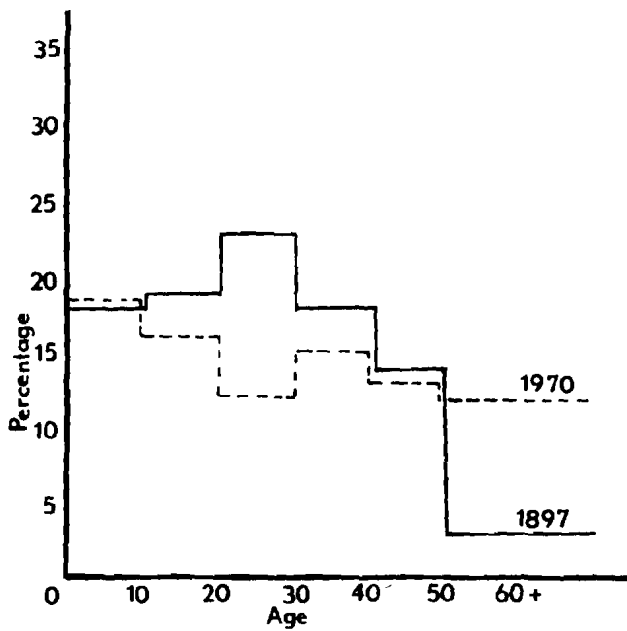
FIGURE 1
PERCENTAGE DISTRIBUTION OF POPULATION BY AGE
IN FOUR ALEUT VILLAGES, 1897 and 1970



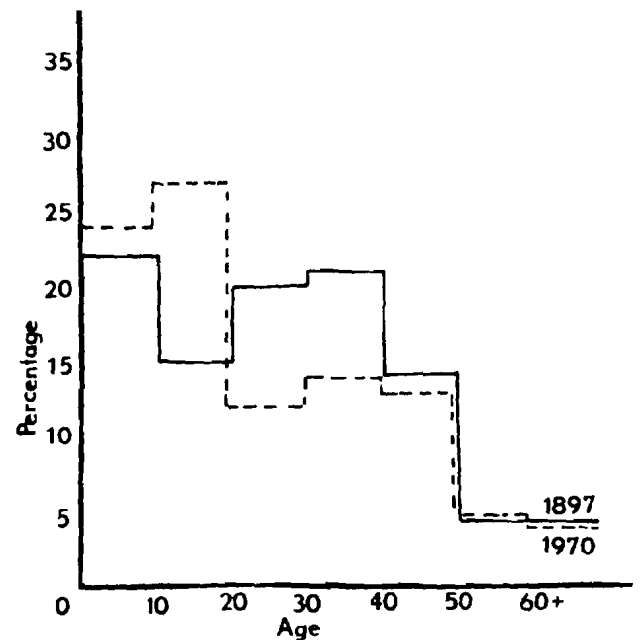
ATKA



AKUTAN



NIKOLSKI



UNALASKA

the contemporary period, and those available refer only to three of the four villages. As they are based on informants' recall, these data are imprecise, but they do indicate the trend (Figure 2). Emigration rates for females in the 20-40 age group exceed those for males. In the decade of the 1960's in Unalaska, Atka, and Akutan, there were respectively 2.7, 1.4, and 1.2 as many female as male emigrants in this age group. The higher female emigration rate may reflect the greater opportunity for females to marry white outsiders.

Even more significant is that the decline in the female population in the child-breeding age group is not accompanied by a corresponding decline in the percentage of children in the village (Figure 3). Atka shows an inverse relationship in the proportion of females in the 20-40 age group to children under 10. In 1970, the number and percentage of Atka children under 10 years is greater than it was in 1897, yet the number and percentage of females in the 20-40 age group has declined from 32 (24 per cent of the population) in 1897 to 4 (5 per cent of the population) in 1970. While not as dramatic as Atka, data from other villages also indicate that a sharp decline in females in the 20-40 age group has not substantially affected the percentage of children under 10 years of age in the population. In Nikolski, in 1970, for example, there is the same percentage of children under 10 years as there was in 1897, yet the percentage of females in the 20-40 age group has declined from 23 to 10 per cent.

Thus we see that a progressively declining percentage of females in the child-breeding age group is producing an essentially similar or larger percentage of living children than formerly. This condition can be explained, in large part, by the reduction in infant and child mortality due to expanded and improved public health services. In addition, a compensatory mechanism may operate to counteract the threat to survival posed by emigration of reproducing adults.⁴

In the village with which the author is most familiar—Unalaska—a number of adults place a high value on large families, despite arduous efforts by public health personnel to introduce family planning and birth control devices. Several families in both Unalaska and Atka produce a disproportionate share of village children. In both villages, for example, 15 per cent of the families with children under 18 produce 30 per cent of village children under 18. This situation contrasts with that in 1897, if we assume a uniform distribution of infant and child deaths. Both the mean number of children under 18 per family and the variation in family size increased substantially from 1897 to 1970 (Table 3).

In sum, the Aleut villages discussed in this paper are surviving in the face of large emigrations of young adults and the resultant decline in the adult, especially female adult,

⁴Hippler, in an analysis of population data from villages in the Kobuk-Seward Peninsula area, also suggested that high birth rates compensate for high emigration rates. Arthur E. Hippler, "Some Observations on the Persistence of Alaskan Native Village Populations," ISEGR Research Note No. A-1, September 1969.

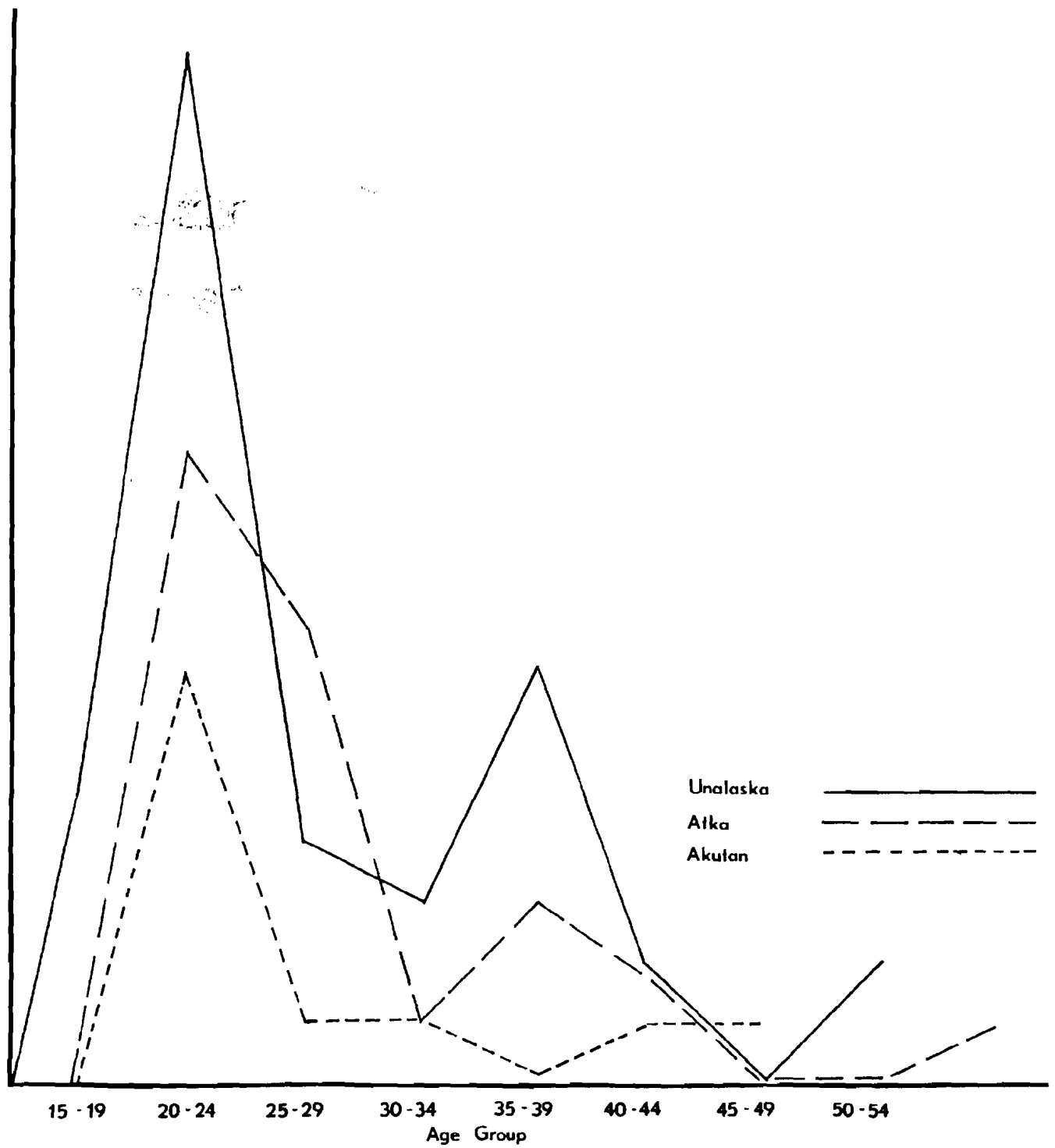


FIGURE 2
AGE COMPOSITION OF ADULT ALEUT EMIGRANTS, 1960-1970,
UNALASKA, ATKA, AKUTAN

FIGURE 3
COMPARISON OF FEMALES 20-40 YEARS TO CHILDREN UNDER 10 FOR FOUR ALEUTIAN VILLAGES
(Given as Percentages of Total Village Population)

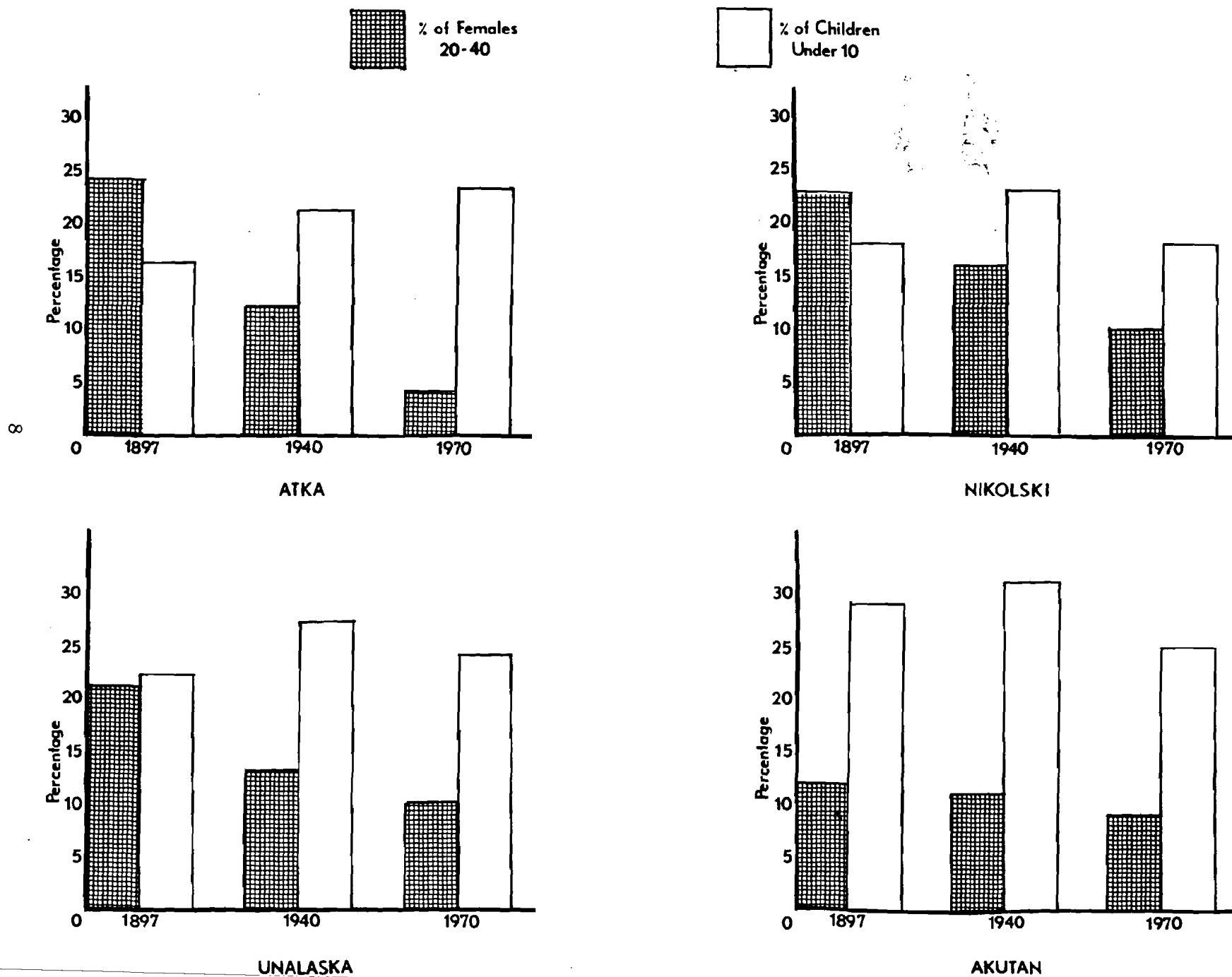


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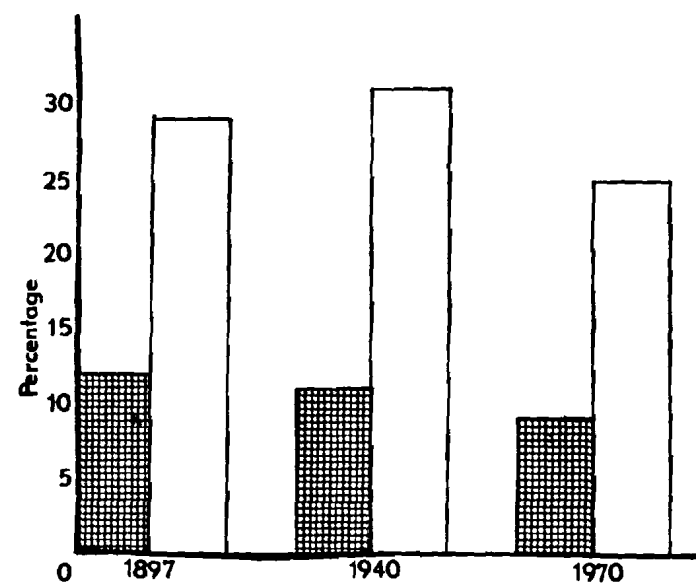
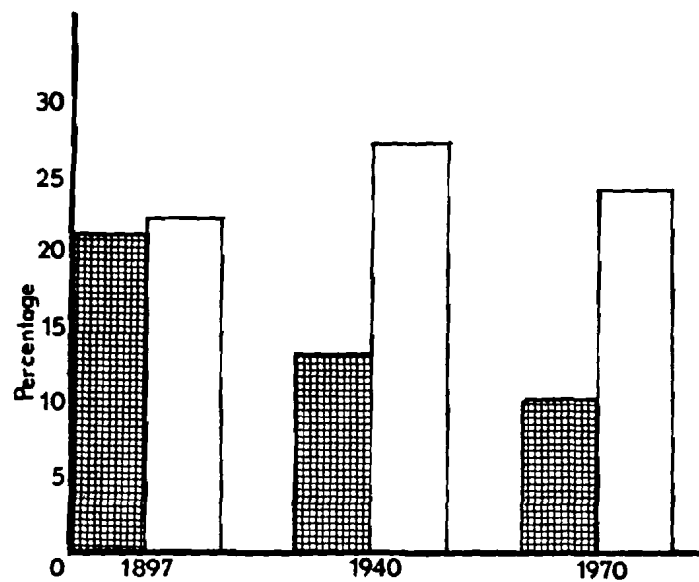
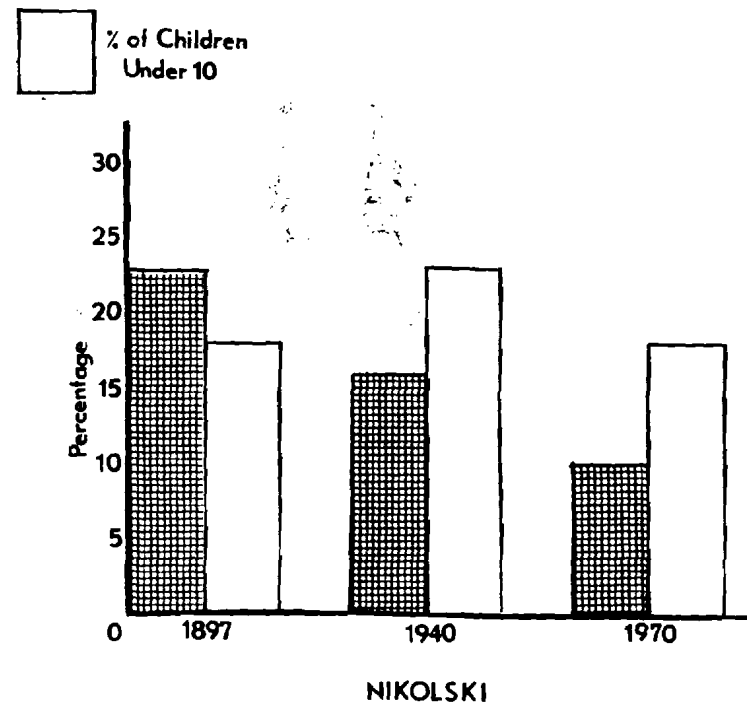
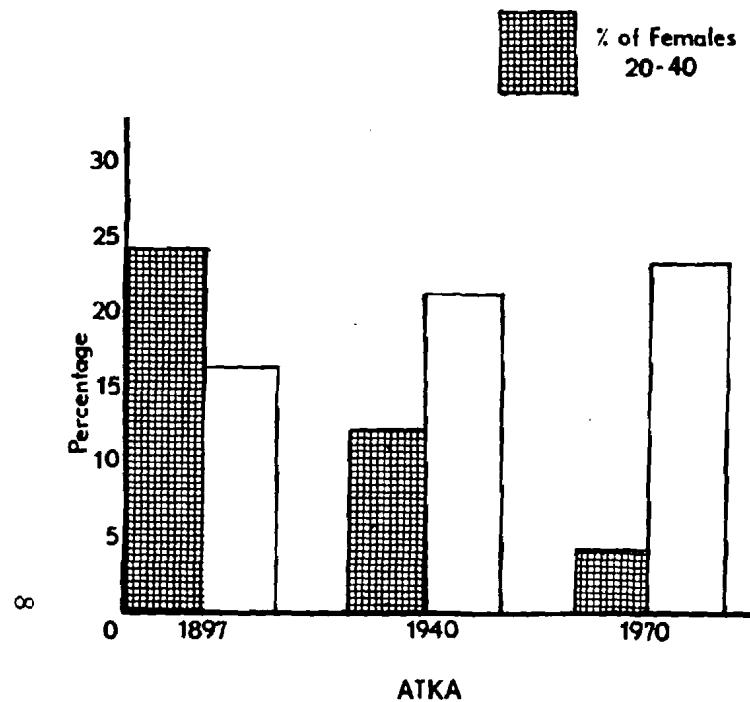


TABLE 3.

Mean Number of Children Under 18 Years Per Family¹ and Standard Deviation,
Unalaska and Atka, 1897² and 1970

Village	Children Per Family	Standard Deviation	Children Per Family	Standard Deviation
Atka	1.96	.94	3.82	2.67
Unalaska	1.76	.93	3.28	3.13

¹This includes only families with one or more living children under 18 years of age.

²Families in the 1897 census include a number of foster children. Those who clearly composed a single family group were included in these calculations. The remainder—eleven in Unalaska and two in Atka—were excluded.

population in the child-breeding age group. This condition may be explained by reductions in infant and child mortality and probably by the operation of a compensatory emphasis on producing large families. If a compensatory mechanism facilitating village survival does indeed operate, then a review of public health policies designed to limit family size in Alaska Native villages may be in order.