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# 8
# Finding the first Finnish family

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## Abstract

This paper explores the first Finnish families using demographic, ethnographic and archaeological methods as well as statistical and simulation data to begin to understand their composition and social relationships. It appears that the first Finnish families subsistence was approximately 40% hunting, 50% fishing, and 10% other. The average mean density is 4 per 100 square kilometers. They were highly mobile moving approximately 10 times a year approximately 12 km per move. Life expectancy at birth was approximately 40 years. Marriage was relatively young --22 for men and 14 for women. There is a great deal of variation in the composition of families. A few families have at least one member in each cohort, many have none in many cohorts resulting in inadequate care for children, subsistence or to reproduction by family members alone. Therefore, there is dependence on interactions among families in clan and moiety structures.


Keywords: Finland, Mesolithic, subsistence, families, demography, age-structure, clans, moieties.

## 8.1 Introduction

The title of this chapter is a bit misleading but not totally. It is not about finding the very first Finnish family but about discovering the nature and describing the characteristics of Finland's early families. In this sense, Finnish is used in its adjectival form, meaning 'from/of Finland', and some liberties are going to be taken when it comes to names. This paper is written as a tribute to Mika Lavento, a professor, an archaeologist, an intermittent colleague, and a friend. We have known each other for decades and his works have been an inspiration. He has worked in Finland and Russia and has shown the prehistoric similarities on both sides of the border. This should not be a surprise for the disputed border is an artifact of modern political realities rather than environmental or cultural phenomena. He studies the past to understand the future.

## 8.2 Archaeological background

There have been many archaeological studies and sites that inform on the Mesolithic or Hunting Gathering Fishing period of Finland. The former would include O'Shea's (1984) reconstructions, Ahola's (2019) stone age deaths, Matiskainen's (1989) subsistence economies, Randsborg's (2007) post glacial studies and Samuelsson & Ytterberg's (2003) unifying sea. To be mentioned are also the recent articles by Miikka Tallavaara et al. (2014) and particularly Mikael Manninen et al. (2018; 2021). There are numerous sites. This is exemplified by Table 1 that presents 42 Mesolithic site contexts abstracted from Table 1 of Dmitriy Gerasimov and Aivar Kriiska's (2008) paper on Mesolithic Contexts for the Eastern Baltic.

**Early Mesolithic context**

| | | |
|---|---|---|
| 1 | Janisjarvi Kirkkolahti 1 | 9300±85 |
| 2 | Saarenoja 2 | 9477±57 |
| 3 | Antrea Korpilahti | 9310±140 |
| 4 | Borovskoye 1 (Antrea Suuri Kelpojarvi) | 9275±120 |
| 5 | Borovskoye 2 | 9336±58 |
| 6 | Maslovo 2 (Kirvu Juhola 2) | 8970±75 |
| 7 | Protochnoye 4 (Rupunkangas 1a) | 8770±85 |
| 8 | Protochnoye 5 (Kaukola Rupunkangas 3) | 8740±80 |
| 9 | Veschevo 10 (Heinjoki Valklampi 1) | 8765±65 |
| 10 | Veschevo 11 (Heinjoki Valklampi 2) | 8720±70 |

**Late Mesolithic Contexts**

| | | |
|---|---|---|
| 11 | Protochnoye 4 (Rupunkangas1a) | |
| 12 | Bolshoye Zavetnoye 4 (Raisala Juoksemajarvi W) | 7750±180 |
| 13 | Rudakovskoye 1 (Raisala Kuusela) | 7945±60 |
| 14 | Kurkijoki 35 24 | 8990 e 8560 7900±80 |
| 15 | Sur 1 | Typology stratigraphy |
| 16 | Veschevo 1 | Typology stratigraphy |
| 17 | Veschevo 2 (Tarhoenranta) | Typology stratigraphy |
| 18 | Narva Joaorg (layer III) | 7640±180 |
| 19 | Ozernoye 3 | 7680±50 |
| 20 | Narva Joaorg (layer II) | 7375±190 |
| 22 | Gusinoye 6 (Pyhajarvi Ristila) | 7095±45 |
| 23 | Komsomolskoye 3 (Pyhajarvi Kunnianiemi 1) | 7195±45 |
| 24 | Sineye 1 (Raisala Hiekka 1) | 6950±60 |
| 25 | Silino 1 (Muolaa Telkkala) | 15 7800 e 7620, 6975±80 |
| 26 | Kozlovo 1 (Kirvu Hauhiala 1) | 6594±40 |
| 27 | Izvoz 2 | 6212±48 |
| 28 | Riigiküla VI | 6130±45 |
| 29 | Riigiküla IV | 6023±95 |
| 30 | Narva Joaorg (layer I) | 5820±200 |
| 31 | Lommi III | 5820±30 |
| 32 | Riigiküla IX | 5469±111 |
| 34 | Riigiküla XII | 5268±58 |
| 35 | Kuzemkino 1 | 5090±40 |
| 36 | Kurkijoki 33 | 6400±600 |
| 37 | Bolshoye Zavetnoye | Typology |
| 38 | Holmogorskoye 1 | Typology |
| 39 | Svetloye 1 | Typology, shoreline chronology |
| 40 | Veschevo 1 | 5770±130 |
| 41 | Silino 1 (Muolaa Telkkala) | 5830±80 |
| 42 | Komsomolskoye 3 (Pyhajarvi Kunnianiemi 1) | 5635±45 |

Table 8.1. Early and Later Mesolithic Archaeological contexts for the eastern Baltic abstracted from Table 1 of Gerasimov & Kriiska (2008).

In a paper entitled "Finnish Archaeology: A Love Story" (Zubrow in press), I suggested that some of the characteristics of the earliest occupiers of Finland could be determined by using ethnographic analogies to hunter/gatherer/fishermen societies that are located in the same general environments as Finland.

Using the actual data base files that Binford created for his classic 2001 study on hunters and gatherers, one gains an insight or at least heuristics to understanding part of their lifestyle. In Binford's survey of 339 hunting, fishing, and gathering groups, none are in present day Finland. However, there are more than 40 that are in the same latitudes and environmental conditions as present day Finland.

Their subsistence is heavily weighted to hunting and fishing. The average percentage of the diet based on hunting terrestrial animals is 42%, fishing and other aquatic resources 55% and gathering terrestrial resources the rest. The average of the mean size of the smallest residential unit is 17, the average of the mean size of the largest residential group is 57, and the average of the mean size of periodic regional camps where various groups get together is 168.

The average of the mean area they occupy is 1202 square kilometers. The average mean density is 4 per 100 square kilometers. The average number of moves per year is 10 and the average mean distance for each move is 12 km. Marriage age is very young particularly for women. The average mean age for marriage is 22 for men and 14 for women. The average mean family size is 4 while the average mean household size is much bigger at 10. Most of these are based on ethnographies written more than a hundred years ago. Several being in 1860 and the average mean date about 1887.

These Finnish hunters, gatherers, and fishermen are different than the average hunter, fishermen and gatherer societies globally. Choosing just a few parameters we immediately see the difference. For the global average the percentage of diets from the three components are 38% hunting, 35% gathering, and 38% fishing. Gathering is far less for those hunters, gatherers and fishermen in Finland. The density is 25 per 100 square kilometers far greater than the Finnish settlers and the area occupied by the ethnic group is much smaller about 39 square kilometers. The demographic size of the regional periodic camps is larger 209. The average number of moves per year is the same 10 but the average distance per move is more than double at 25 km per move for the global average. The mean household size is 8 globally compared to 10 for their Finnish compatriots" (Zubrow in press).

In this paper, I want to explore the concepts of the early Finnish family using life tables, kinship models and migration models.

## 8.3 Demographic background and methodology

The general population equation determines the size of a population of a community. It is:

$P_{(t+1)=} P_t + (IM_t - EM_t) + (B_t - D_t)$ equation 1.

where P is the population at time t. IM is the number of immigrants at time t. EM is the number of emigrants at time t. B is the number of births at time t and D is the number of deaths at time t. One may represent the demographic structure of a community as a population pyramid and its structure through life tables.

In other words, the population in a community is determined by the size of the population in each age cohort and the numbers who increase the cohort by births, becoming older and immigration and the numbers who decrease the cohort by deaths or emigration.

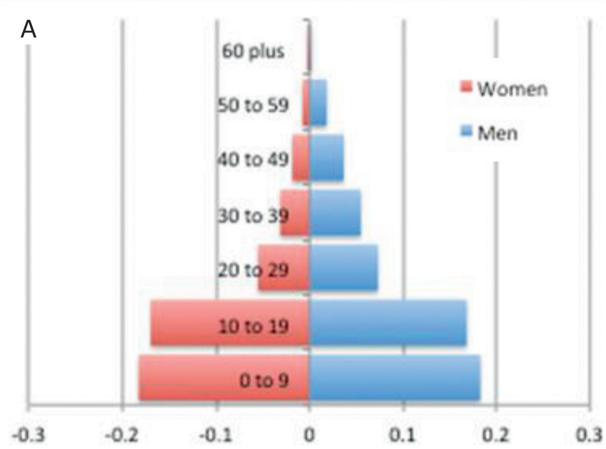
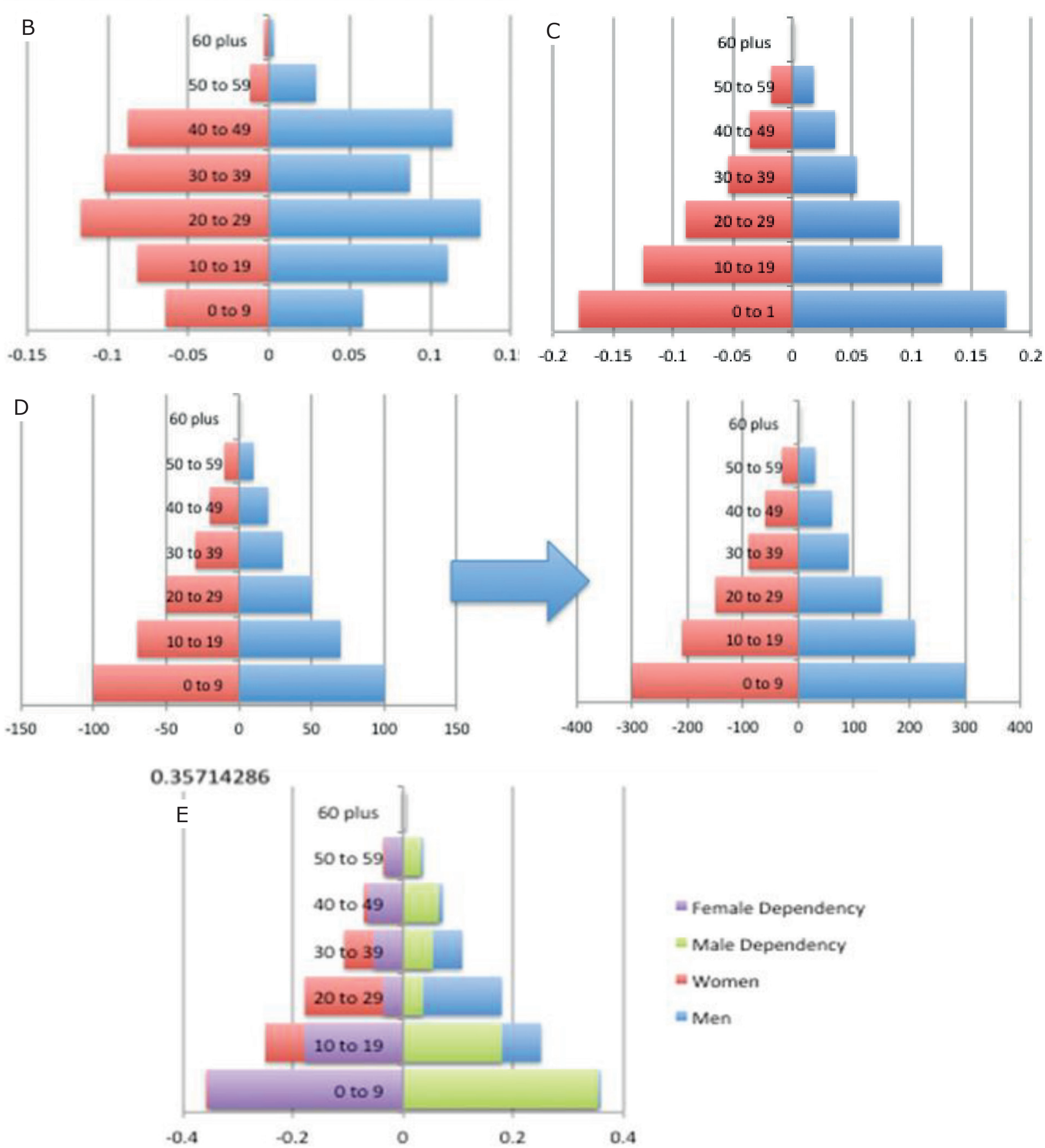



Figure 8.1. A – A population pyramid of a growing population. B – A population pyramid of a declining population. C – A stable stationary population. D – A stable population changing over time. E – A population pyramid showing both the percentages of the populations in the cohorts and the percentage of dependents. Graphs E. Zubrow.



In general, there are four types of populations and different shape pyramids represent them. They are a growing population in which there are more than sufficient young persons in the lower age cohorts to replace those who die in the older cohorts (Fig. 8.1a). Fewer young women survive into their 20's than men because of higher rates of mortality during childbirth. The scale is the percentage of the total population in female and male cohorts respectively. A declining population is one in which the numbers of individuals in the lower cohorts are insufficient to replace the numbers of individuals in the older cohorts. In Figure 8.1b, the lower percentages of the total population in the cohorts 0 to 9 and 10 to 19 means that in the next 10 or 20 years they will not be able to replace the number of people in 20 to 29 and 30 to 39 cohorts.

Comparing Figures 8.1a and 8.1b, one sees that in a growing population, the sizes of the age cohorts during the periods of fertility are relatively large and so are the cohorts of children. In declining populations, the number of the aged above the age of fertility is relatively large.

The concepts of a stationary and a stable population are interconnected. A stationary population is one in which all the cohorts are balanced. Fertility in the appropriate cohorts and mortality are completely balanced. For everyone who dies, someone is born. Furthermore, the births and deaths occur at the appropriate times so that the ratios between the different age cohorts remain the same. The result is a static population that is totally stationary. The size of population does not change nor do the relative ages of the population to each other. Figure 8.1c is the population pyramid for a stationary population. The fertility and mortality rate balance each other and the age cohorts are so configured that over time the size ratios stay the same. A stable population (Fig. 8.1d) is similar to the stationary population (Fig. 8.1c) with one major exception, the numbers of people in each cohort are not fixed. So the ratios of the numbers of people in each cohort in relation to each cohort remains the same, the actual numbers within the population can grow or decline. In Figure 8.1d they are growing; Figure 8.1e shows dependency as a proportion of each age cohort in a community.

Some communities may have greater or lesser dependency. Figure 8.1e shows what might happen after a disaster creating a significant loss of adult men and increased dependency by women. This could be the result of warfare or imagine a fishing accident. It could be the opposite as well.

Most readers will be familiar with life tables. They are used to summarize many aspects of a population. They are based upon dividing the total population into age cohorts. The age interval of the cohort varies although it is frequently 1, 5, and 10 years. One knows the number surviving to the beginning of the age interval and the number of people dying during the age interval. From these one may calculate number of years lived by the cohort within indicated age interval, and the total person years of life contributed by the cohort after attaining a particular age. These in turn allow for the calculation of the life expectancy. The life expectancy actually is the average number of years of life remaining for a person alive at the beginning of the cohort's age interval. Life tables have a long history regarding understanding both the statics and the dynamics of a population. As a static representation, it is a snapshot of a community at a given instant. However, since the members of the younger cohort become the members of the older cohorts as time passes, it also is a dynamic representation.

Life tables and the vital statistics on which they are based are a critical part of the actuarial and insurance industries as well as used for national and health policy. It is somewhat ironic that their first use and their present use are similar in trying to understand the impact of pandemics on the community. It was two fellows of the Royal Society, John Graunt (elected 1663) and Edmond Halley (elected 1678) who put together the earliest known life table or table of mortality for the plague. They gathered similar data to national health services or John Hopkins collecting the same data for the Corona virus. Table 8.2 and 8.3 are early mortality and life tables from the 17th century (Greenwood 1938; Bellhouse 2011).

| An.Do. | Weſtmin Bur. | Ch. | Iſlington, B. | Ch. | Lambeth, B. | Ch. | Stepney. B. | Ch. | Newing. B. | Ch. | Hackney, B. | Ch. | Redr. B. | Ch. | Tot. 7. Par. B. | Tot 7. Par Ch. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1636 | 1107 | 556 | 90 | 56 | 213 | 137 | 1895 | 881 | 584 | 155 | 68 | 77 | 90 | 62 | 4056 | 1924 |
| | 442 | | 30 | | 45 | | 909 | | 242 | | 14 | | 20 | | 1702 | |
| 1637 | 963 | 496 | 94 | 72 | 173 | 137 | 952 | 838 | 183 | 172 | 68 | 70 | 74 | 51 | 2507 | 1836 |
| | 301 | | 17 | | 18 | | 153 | | 16 | | 6 | | 10 | | 521 | |
| 1638 | 1021 | 563 | 116 | 49 | 221 | 140 | 1209 | 908 | 255 | 146 | 101 | 69 | 74 | 78 | 2997 | 1953 |
| | 126 | | | | 8 | | 11 | | | | | | | | 145 | |
| 1639 | [illegible] | 543 | 88 | 53 | 195 | 132 | 970 | 956 | 187 | 159 | 84 | 53 | 81 | 52 | 2151 | 1948 |
| | 4 | | 2 | | | | | | | | | | 1 | | 9 | |
| 1640 | 754 | 665 | 94 | 54 | 187 | 142 | 1106 | 983 | 189 | 194 | 76 | 54 | 53 | 77 | 2459 | 2159 |
| | 62 | | 3 | | 6 | | 117 | | | | | | 1 | | 189 | |
| 1641 | 697 | 625 | 92 | 76 | 168 | 137 | 1250 | 1037 | 170 | 137 | 82 | 73 | 69 | 64 | 2508 | 2149 |
| | 40 | | 5 | | 9 | | 70 | | | | 4 | | | | 128 | |
| 1642 | 671 | 630 | 98 | 71 | 149 | 124 | 1270 | 1158 | 160 | 145 | 78 | 58 | 63 | 76 | 2489 | 2262 |
| | 37 | | 4 | | 12 | | 20 | | 17 | | 5 | | 4 | | 99 | |
| 1643 | 666 | 592 | 105 | 69 | 177 | 114 | 1167 | 1013 | 240 | 147 | 65 | 36 | 42 | 67 | 2471 | 2038 |
| | 25 | | 3 | | 45 | | 83 | | 86 | | | | 2 | | 244 | |
| 1644 | 570 | 429 | 61 | 55 | 115 | 105 | 1187 | 933 | 123 | 101 | 54 | 45 | 70 | 82 | 2189 | 1750 |
| | 35 | | 8 | | 8 | | 269 | | 44 | | 3 | | 17 | | 384 | |
| 1645 | 621 | 444 | 55 | 63 | 146 | 114 | 1171 | 873 | 183 | 119 | 58 | 60 | 50 | 60 | 2284 | 1753 |
| | 62 | | 6 | | 3 | | 150 | | 18 | | 7 | | 1 | | 256 | |
| 1646 | 691 | 503 | 84 | 61 | 137 | 108 | 1230 | 960 | 156 | 130 | 76 | 63 | 47 | 43 | 2421 | 1868 |
| | 76 | | 8 | | 5 | | 97 | | 14 | | 9 | | 2 | | 263 | |
| 1647 | 739 | 464 | 108 | 56 | 161 | 94 | 1126 | 926 | 129 | 65 | 88 | 45 | 42 | 44 | 2393 | 1688 |
| | 114 | | 12 | | 25 | | 155 | | 28 | | 16 | | 4 | | 434 | |
| 1648 | 561 | 384 | 68 | 46 | 87 | 57 | 837 | 767 | | | 57 | 42 | 45 | 59 | 1635 | 1305 |
| | 41 | | 4 | | | | 31 | | | | 6 | | | | 82 | |
| 1649 | 558 | 333 | 90 | 44 | 131 | 53 | 838 | 625 | | | 90 | 49 | | | 1807 | 1106 |
| | | | 1 | | | | 3 | | | | | | | | 4 | |
| 1650 | 470 | 413 | 78 | 54 | 88 | 50 | 748 | 572 | 55 | 65 | 61 | 48 | 50 | 62 | 1550 | 1264 |
| 1651 | 580 | 345 | 107 | 51 | 127 | 49 | 961 | 634 | 172 | 59 | 60 | 30 | 84 | 45 | 2091 | 1213 |
| 1652 | 649 | 432 | 99 | 36 | 179 | 50 | 1212 | 657 | 198 | 85 | 72 | 33 | 74 | 37 | 2483 | 1330 |
| | | | | | 1 | | | | | | | | | | | |
| 1653 | 567 | 394 | 69 | 46 | 120 | 54 | 1064 | 620 | 195 | 76 | 71 | 48 | 69 | 21 | [illegible] | 1250 |
| 1654 | 657 | 401 | 96 | 65 | 166 | 76 | 1252 | 803 | 236 | 106 | 88 | 31 | 77 | 46 | [illegible] | [illegible] |
| 1655 | 676 | 414 | 95 | 86 | 134 | 128 | 1199 | 859 | 172 | 120 | 68 | 37 | 62 | 57 | [illegible] | [illegible] |

Table 8.2. Early mortality and life tables from the 17th century. (According to Greenwood 1938 and Bellhouse 2011.)

| Age. Curt. | Perſons. | Age. Curt. | Perſons | Age. Curt. | Perſons | Age. Curt. | Perſons | Age. Curt. | Perſons | Age. Curt. | Perſons |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1000 | 8 | 680 | 15 | 628 | 22 | 585 | 29 | 539 | 36 | 481 |
| 2 | 855 | 9 | 670 | 16 | 622 | 23 | 579 | 30 | 531 | 37 | 472 |
| 3 | 798 | 10 | 661 | 17 | 616 | 24 | 573 | 31 | 523 | 38 | 463 |
| 4 | 760 | 11 | 653 | 18 | 610 | 25 | 567 | 32 | 515 | 39 | 454 |
| 5 | 732 | 12 | 646 | 19 | 604 | 26 | 560 | 33 | 507 | 40 | 445 |
| 6 | 710 | 13 | 640 | 20 | 598 | 27 | 553 | 34 | 499 | 41 | 436 |
| 7 | 692 | 14 | 634 | 21 | 592 | 28 | 546 | 35 | 490 | 42 | 427 |
| Age. Curt | Perſons. | Age. Curt. | Perſons | Age. Curt. | Perſons | Age Curt | Perſons | Age. Curt. | Perſons | Age. Curt. | Perſons |
| 43 | 417 | 50 | 346 | 57 | 272 | 64 | 202 | 71 | 131 | 78 | 58 |
| 44 | 407 | 51 | 335 | 58 | 262 | 65 | 192 | 72 | 120 | 79 | 49 |
| 45 | 397 | 52 | 324 | 59 | 252 | 66 | 182 | 73 | 109 | 80 | 41 |
| 46 | 387 | 53 | 313 | 60 | 242 | 67 | 172 | 74 | 98 | 81 | 34 |
| 47 | 377 | 54 | 302 | 61 | 232 | 68 | 162 | 75 | 88 | 82 | 28 |
| 48 | 367 | 55 | 292 | 62 | 222 | 69 | 152 | 76 | 78 | 83 | 23 |
| 49 | 357 | 56 | 282 | 63 | 212 | 70 | 142 | 77 | 68 | 84 | 20 |

| Age. | Perſons. |
|---|---|
| 7 | 5547 |
| 14 | 4584 |
| 21 | 4270 |
| 28 | 3964 |
| 35 | 3604 |
| 42 | 3178 |
| 49 | 2709 |
| 56 | 2194 |
| 63 | 1694 |
| 70 | 1204 |
| 77 | 692 |
| 84 | 253 |
| 100 | 107 |
| | 34000 |
| | Sum Total. |

Table 8.3. Early mortality and life tables from the 17th century. (According to Greenwood 1938 and Bellhouse 2011.)

Thinking very abstractly, our lives and our longevity is a random experiment and its outcome, survival or death, is subject to chance. Our cultures are a systematic and variably successful strategy to reduce the randomness.

## 8.4 Results

However, if one wishes to develop life tables from early historic or prehistoric societies one needs to rely upon either ethnographic analogies or archaeological proxies. This paper will rely more upon the former than the latter. László Németh & Trifon I. Missov (2018) have compared ethnographic hunter-gatherer populations to contemporary populations. Their life expectancy results using different statistical techniques are in Figure 8.2a.

Our constructed life table below (Table 4) is for early Finnish hunters and gatherers. It corresponds to Nemeth and Missov's higher values for hunters and gatherers using the "constant hazard" technique. We use the 10 households with 4 family members from our above discussion. We have approximately the same life expectancy for the 0–1 cohort, approximately 40 years.

Given our life table, let us analyze its implications for the early Finnish family. In order to do so let us simulate Finnish families based upon the life table. One randomly assigns members of each cohort to one of the 10 households. Then one counts the number of the members of each family in each cohort. We have done more than 500 simulations. Some of the simulations are presented in Figure 8.2b. Figure 8.2b graph a) has relatively richly populated set of families. Most of the families have between 1 and 3 members and in each family most of the cohorts have members. This providing a reasonably diverse community among the age groups and the families. Figure 8.2b graph b) is a poorly populated set of families. Here a significant proportion of the community is in two cohorts and in two families. They are the infants in Family B and the middle aged 31–40 in Family D. The rest of the families and cohorts usually have only 1 member. In Figure 8.2b graph c) one has a clear example of a situation that frequently occurs. If one examines Family I all the members are in a single cohort 31–40. All the younger and all the older members of this family have died. In Figure 8.2b graph d) one notes that there are a few infants for most families. But in one family there is no one in the older

| x, x+n | ${}_nq_{xi}$ | $l_x$ | ${}_nd_x$ | ${}_nL_x$ | $T_x$ | $e_x^0$ |
|---|---|---|---|---|---|---|
| <1 | 0.29516 | 8.47 | 2.50 | 5.97 | 354.08 | 41.80 |
| 1 to 10 | 0.03350 | 5.97 | 0.20 | 59.50 | 348.11 | 58.31 |
| 11 to 20 | 0.05199 | 5.77 | 0.30 | 57.40 | 288.61 | 50.02 |
| 21 to 30 | 0.07313 | 5.47 | 0.40 | 54.30 | 231.21 | 42.27 |
| 31 to 40 | 0.09862 | 5.07 | 0.50 | 50.20 | 176.91 | 34.89 |
| 41 to 50 | 0.13363 | 4.49 | 0.60 | 44.30 | 126.71 | 28.22 |
| 51 to 60 | 0.77121 | 3.89 | 3.00 | 35.90 | 82.41 | 21.19 |
| 61+ | 2.69663 | 0.89 | 2.40 | 14.51 | 46.51 | 0.56 |

Table 8.4. Life Table for First Finnish Families. Where x, x+n is the age interval- period of life between two exact ages; ${}_nq_{xi}$ is the proportion of people alive at beginning of age interval; $l_x$ is the number surviving to the beginning of age interval; ${}_nd_x$ is the number of persons dying during the age interval (x,x+n); ${}_nL_x$ is the number of years lived by the cohort within indicated age interval (x,x+n); $T_x$ is the total person years of life contributed by the cohort after attaining age x; $e_x^0$ ife expectancy-the average number of years of life remaining for a person alive at the beginning of age interval x.

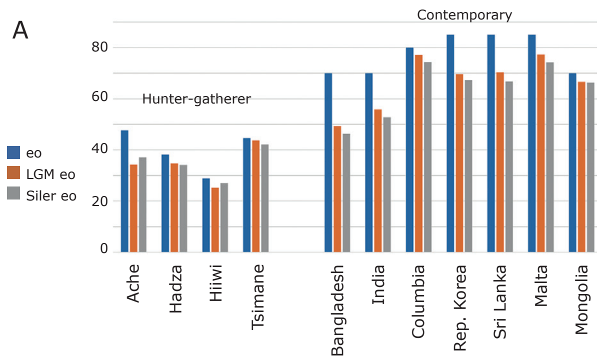



Figure 8.2. A – Comparison of life expectancies at birth between ethnographic hunter-gatherer populations and contemporary populations using different statistical techniques. B – Shows examples of our Simulated First Finnish Families showing number of members in each of ten families by age cohorts. C – Shows examples of Maximum Dyadic Relationships within Simulated First Finnish Families. Graphs E. Zubrow.

cohorts to care for them. This is Family E. In two families B and F there are only members of the 1–10 cohort to take care of the infants. This is another situation that frequently occurs probably with tragic consequences.

We know that in many northern ethnographic, hunting and gathering societies the social organization included clans and moieties. Shepherd suggests there are central cultural themes (Shepherd 1995) for the Finnish "Mesolithic" (Sarmela 1983) and archaeological artifacts (Carpelan 1974) probably were clan totems. Following her suggestion, we will use three clans in our simulation. They are labeled clan I, II, and III. For the bear theme being dominant we make clan III dominant.

In Figure 8.3 we show some of the results of the clan simulations over time. Clan I and II consist of three families while clan III consists of four families. Therefore, it is not surprising that clan III dominates the number of dyadic clan member interactions within the clan in all the Figures 8.3 graphs. Similarly, the degree of variation over time with larger rises and falls is far greater for clan III than the other clans. Only in the case of Figure 8.3 graph a) does one clan, clan I, reach the same peak values as clan III. Clan I at time 22 reaches the same number of interactions, 190, as clan III at time 18. The amount of variation differs widely across Figures 8.3 graphs. Figure 8.3 graph c) shows far less variation than the others for all the clans.

Simulating Shepherd's moieties within the constraints of our life tables, families, and clans one gets such simulations as in Figure 8.4. As one would expect given a fixed number of members in the community

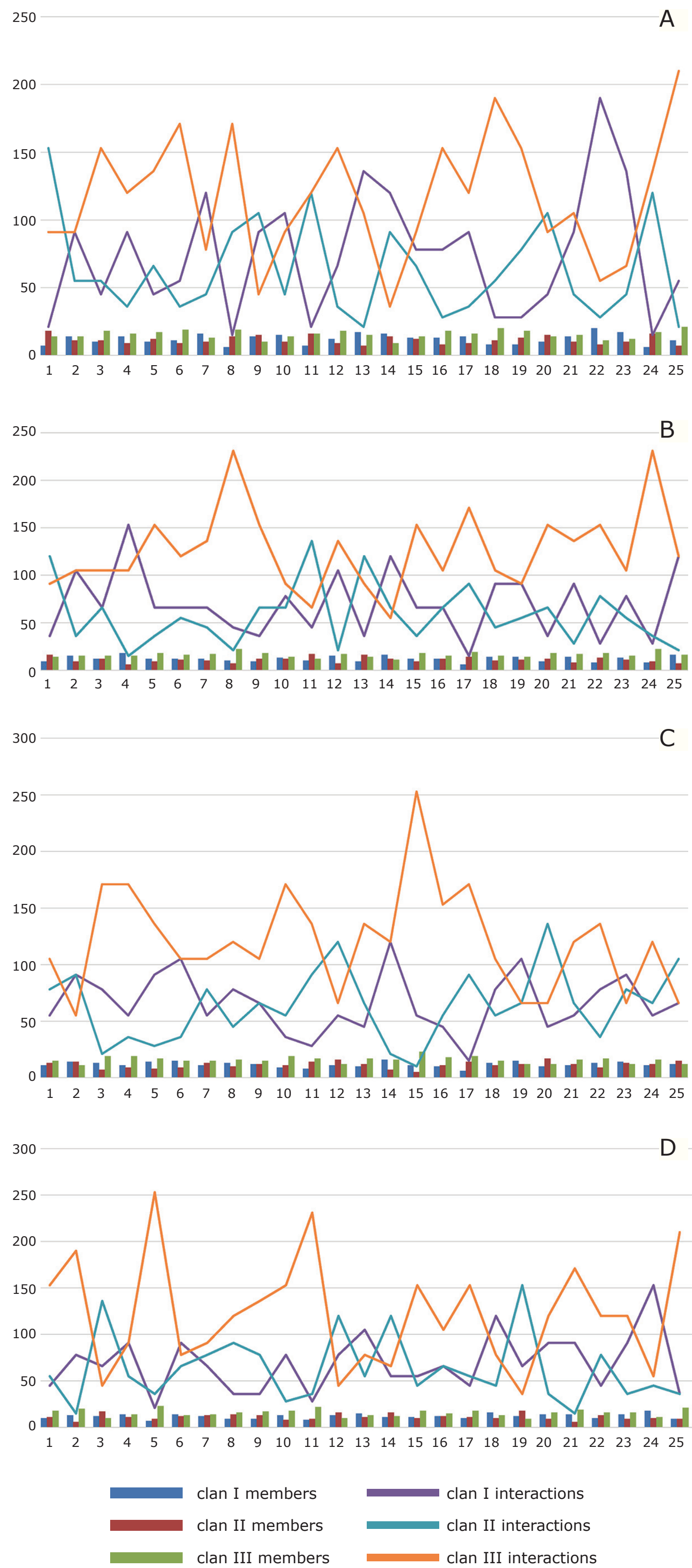



Figure 8.3 Four chosen simulations of the interactions and membership of Clans I, II, and III over time. Graphs E. Zubrow.

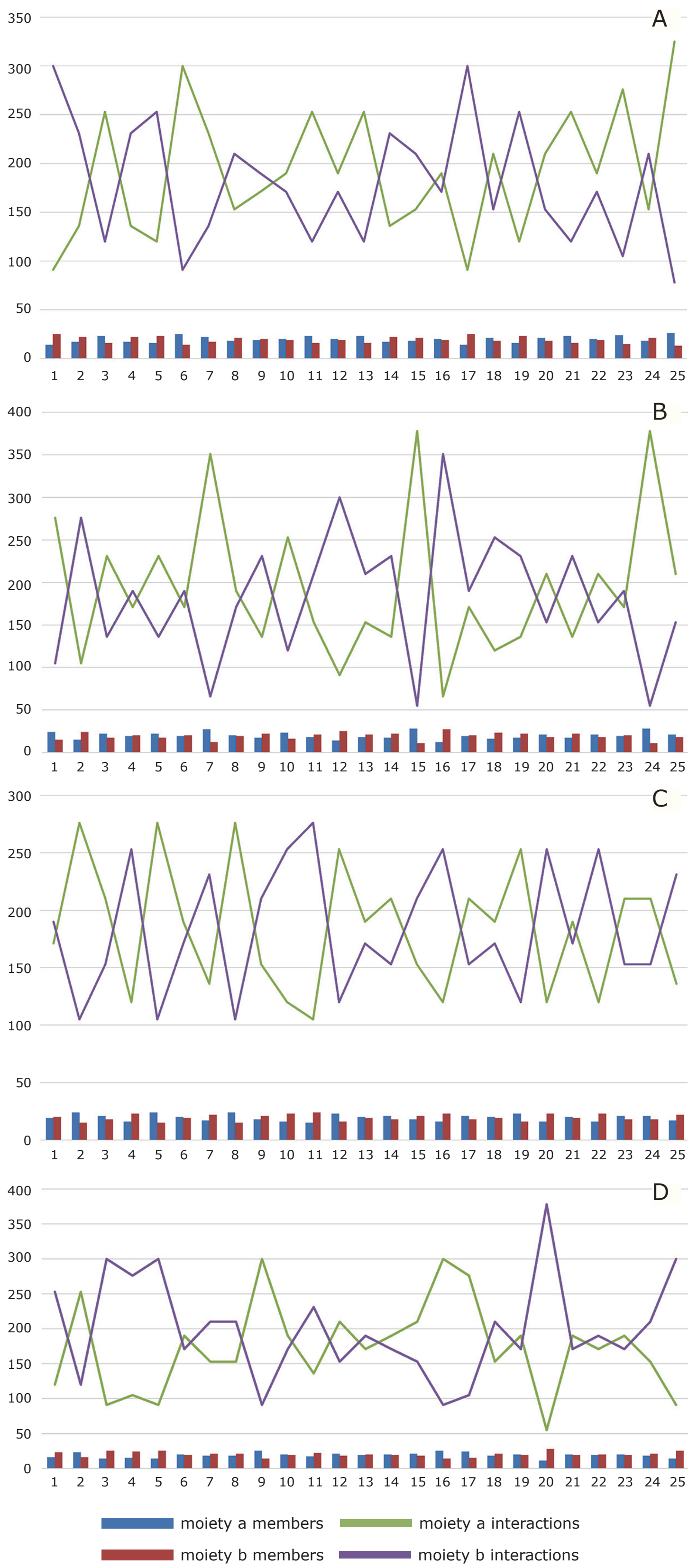



Figure 8.4.Four chosen simulations of the interactions and membership of moieties a and b over time. Graphs E. Zubrow.

and that all members need to belong to one moiety or the other the potential interactions of the moieties are the inverse of each other. However, because of the differences in family size due to the fact that in some families there are fewer members in each cohort the total number of interactions may vary widely. One might think about the periodization and the variation of the changing interactions of the moieties across time. Consider Figure 8.4 graph b). There are extended periods where the number of interactions are relatively small. These periods are interrupted by spikes where the number of interactions is relatively large. In comparison, there is Figure 8.4 graph c), where not only is the increase and the decrease in the size of interactions for each moiety almost the same across time but the cycle of increases and decreases are more or less constant. The result is no clear periodization. Returning to Figure 8.4, graphs, where there is clear periodization of lower number of interactions interrupted by spikes of high interaction, the temporal location of the periods and the spikes differ. This pattern of periodization we find considerably more frequently over the 500 plus simulations than we find non-periodization.

Leavitt, Diachenko, and Zubrow have been working on a general migration and growth model that is based upon a Malthusian model in which populations grow to the resource limits and if the population exceeds resources they move to the next best area. The model is more sophisticated in that it allows not only realities but perceptions of the present, perceptions of the future, fear, and animosity to migrants to play a role in the deciding process. Using this simulation on six of the ten communities one finds different scenarios over time depending upon the particular carrying capacities that each community's environment has. Figure 8.5 shows four of these simulations. In Figure 8.5 graph a) each community grows over time and because some local environments are better than others the populations grow differentially in the latter periods – the better the environment the bigger the growth. In Figure 8.5 graph b), the environmental differentiation is less. In Figure 8.5 graph c) all but one of the communities continues to grow but as the one community faces increasing hardship, environmental failure, their population migrates to the other growing communities and their community diminishes over time. In Figure 8.5 graph d), only one community flourishes as each of the others reaches resource limits; their population migrates to the one growing settlement. It is not difficult to imagine the impact of these different simulations on the geographic distribution of sites in Mesolithic Finland.

## 8.5 Conclusion

Let's try to put some life into these dry simulations by picturing the domestic life of the first Finnish families. Let us imagine that the year is around 10 000 BCE near the modern Russian border at Lappeenranta. There are some 10 families. For the sake of ease we will assume that the Finnish tendency to have family names ending with "nen" already

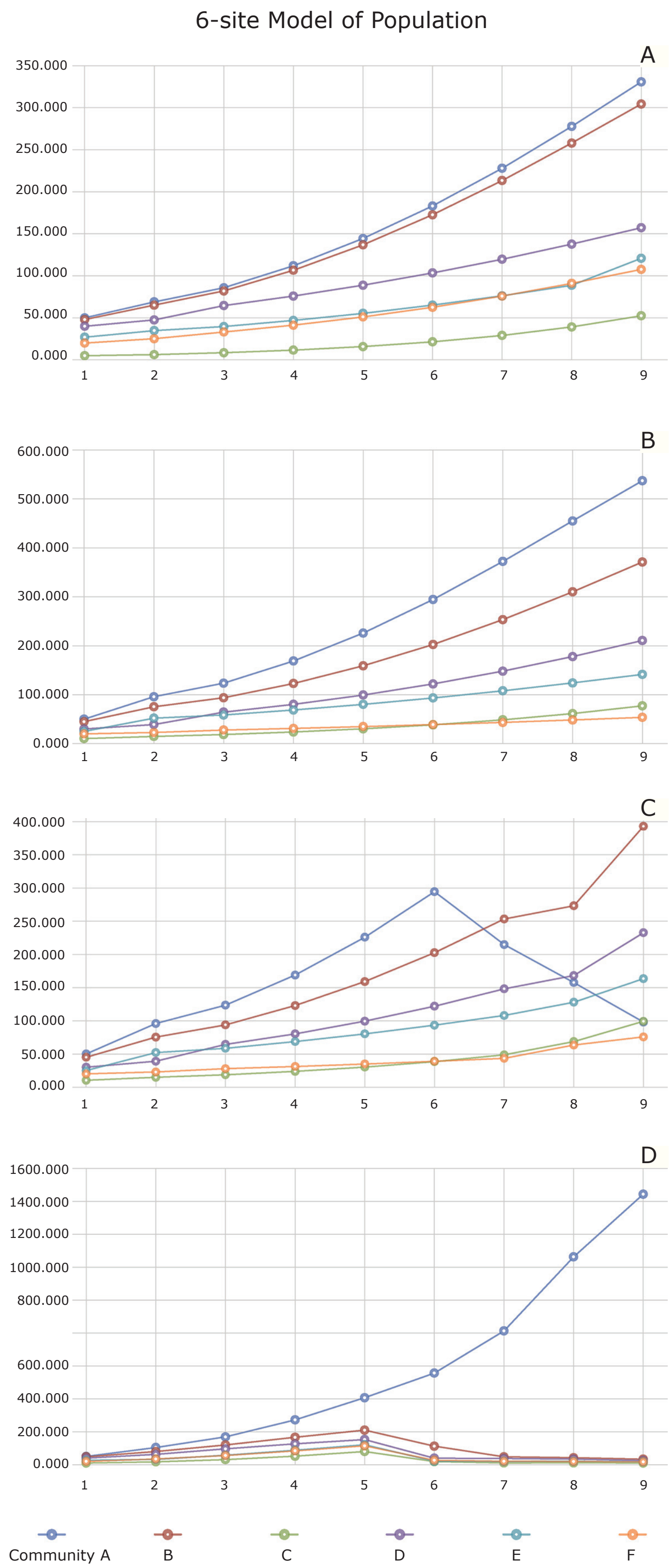



Figure 8.5. Four chosen simulations of the migrations of the first Finnish families. Graphs E. Zubrow.

exists. Consequently, these families are named Harjunen, Järvinen, Jokinen, Kallionen, Koskinen, Lahtinen, Mäkinen, Nieminen, Saarinen, and Virtanen, following features in nature.

- It is made up of by the Harjunen, Virtanen family and the Nieminen family. Together the hunting party is made up of four people: Alpi and Otso Harjunen, Pyry Virtanen, and Päiviö Nieminen. If five are necessary they are joined by Taisto Virtanen.
- The Mäkinen family is in difficulty it has only 1 member – no infants, no children, one female teenager age 13 named Aamu, no adults and no grandparents.
- This may be compared to the Jokinen family which has many members. There is one female infant, Kielo, one girl age 8, Ilta, one teenage girl age 14, Sointu, two adults, Sulo a man 46, and a woman 41 named Pulmu and a grandmother age 63 named Suvi.
- Similar to the Jokinen, the Koskinen family is doing well but with a different distribution of the six members. Because their distribution is younger they might be more successful if they survive but the probability of survival is somewhat less. This family has two infants, both girls named Taimi and Lumi, two teenagers, both boys – Uljas age 14 and Vesa named 17, one young female adult 26 named Kukka, and one male named Voitto age 44. The average age of the Jokinen family is 28.8 and the Koskinens is of 17.1 years.
- The Kallionen family has a male and a female infant – Terho and Sirkku, one man, Kauno who is 21, and a woman who is 42 named Päivä and a grandmother who is 58.
- The Järvinens have no infants but a young boy 3 years old named Toivo, and Veli, a male teenager 18 years old; two adults, a woman 36, named Kerttu and a man 32 named Kauko.
- Meanwhile the Lahtinen family has four members, one female infant, two teenagers both girls ages 13 and 18 named Sisko and Orvokki and an adult male 49, Jalo.
- Finally, there is the Saarinen family, which is quite precarious with only one male infant named Into, and a woman who is 39 named Impi.

We really have no idea what names they used nor what they actually looked like. However, on the basis of modern average Finnish phenotypes perhaps Matti Meikäläinen and Maija Meikäläinen looked somewhat similar to the people in Figure 8.6.

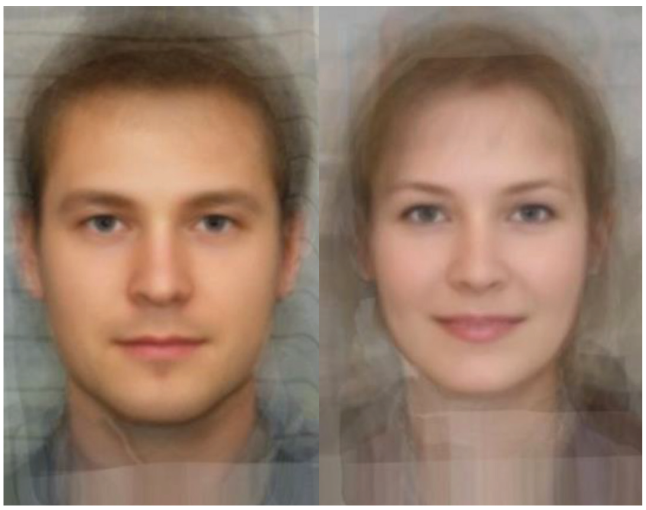


Figure 8.6. Members of first Finnish families based on average phenotype. Images https://pmsol3.wordpress.com/2011/04/07/world-of-averages-europe-ave/.

We know they must have hunted, gathered and fished. One can easily imagine Matti Meikäläinen hunting by himself. Sometimes hunting parties being created from the interaction within families did not have enough people to form. Then, hunting parties might be clan-based. Remember there are three clans – one might name them Karhu, Hirvi, and Kalastaja (Sarmela 1983; 1991; Shepherd 1995). But one should not assume that hunting parties were only male. We know at the Andean highland site of Wilamaya Patjxa there is a 9000-year-old female burial (WMP6) associated with a hunting toolkit of stone projectile points and animal processing tools (Haas et al. 2020). Similarly, P.

Bion Griffin and others have shown that women in hunter and gatherer societies hunt and participate in hunting parties as well (Goodman et al. 1985). So let us assume that the Karhu clan provides a hunting party. It is made up of by the Harjunen, Virtanen family and the Nieminen family. Together the hunting party is made up of four people: Alpi and Otso Harjunen, Pyry Virtanen, and Päiviö Nieminen. If five are necessary they are joined by Taisto Virtanen.

> "Before the first sunrays of the day kiss the lakeshore near Lappeenranta before the grays slowly evolve into browns and finalize into greens and purples, then the elk graze. We, hunters of the Karhu clan, know they eat under the cover of the last darkness eating grass, sedges, and forbs in the spring and summer lifting their heads in the fall and winter to eat shrubs, tree bark and needles. They move slowly, lolloping in their sweet way, nibbling as they go. At the slightest noise they are up, alarms flashing, seeing more and from more directions than we will ever be able.
>
> Sometimes we watch them for a while, enjoying this art of creation. Just because we need to eat, it doesn't mean we don't love nature.
>
> Then crawling up nearer or hiding behind a tree Otso takes aim, one spear practiced, hopefully kind and quick. Then the job is done. The elk scatters after that and if we are skilled and lucky we only remain to butcher the fresh kill."

We know that the hunt is sometimes eaten at the kill site and sometimes brought back to the camp. There are many interactions with different sharing principles being applied. Some are based on family kinship; some clan membership; or even moiety membership. Others are based on age and gender principles. Even the geographic location of the food sharing interactions may impact both short term survival and long-term equality or hierarchy creation. Consider two different ways of interacting by sharing. Otso brings the kill back to the Harjunen family, who share it with the Virtanen family and who in turn share it with Nieminen family. As each family takes its share leaving less for the next, the result is ever diminishing amounts to the last families with whom sharing takes place. And if the same hunters are successful, a hierarchy of wealth is created.

On the other hand, if Otso brings the kill to a common place and each family takes from it, the result is long term equality (Zubrow 2010).

Far more may be done with this but that is for another paper.

As Mika Levanto knows the only true profile of the past may only be drawn from research, from excavation, and from imagination. For we archaeologists what we ask for is absurd, in that we know the meaning of prehistoric lives. However, we strive again and again to make that impossible goal that prehistoric lives shall acquire real meaning.

The first Finnish families are the families before legend. They lived, loved, and died and disappeared from our consciousness. They interacted as we do again and again from the beginning to the end of their days making up the ledgers of lives. But we see them through the thickest fog and only the fragments of their existence survive the howling storms of time.

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