Descending of a few Finno-Karelian R1a1 groups

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There are a few peculiar Finno-Karelian clusters of R1a1, which are not found anywhere else. Guesses have been made that these could originate either from Russia or Scandinavia, both of which have R1a1 in higher frequency than Finland does. Here I attempt to analyze these Finno-Karelian R1a1-haplotypes in 67 and 111 (when possible) STR-markers collected from the FamilyTreeDNA database of the project *R1a1a and subclades* (and checking also many national projects), taking into account also the SNP-mutations. I will concentrate on R1a1-Z280+, but I root it to the ancestral R1a1 groups to find out the correct hierarchy of the family tree.

Unfortunately I haven't yet find a program which could reliably and correctly cluster haplotypes, so I have to make the comparison by eye and brain, listing reconstructed founder haplotypes of each group. The reconstructed founder haplotype is not necessarily the same as the modal haplotype (= from the values 13, 13, 14, 15, 16 we choose **13** because it is the most frequent) or median haplotype (= from the values 13, 13, 14, 15, 16 we choose **14** because it is the middle value). If after the rooting the ancestral group has the value 15, then from the values 13, 13, 14, 15, 16 we choose **15** for the reconstructed founder haplotype (FHT).

More about the method of comparison in my bilingual (Finnish/English) N1c1a-presentation:
http://www.elisanet.fi/alkupera/N1c1tree.pdf

Codes

1a2b. Finnish = reconstructed founder haplotype (FHT) of a group; the most recent common ancestor of all the haplotypes of the group.
1a2* single haplotypes = haplotypes of the group 1a2 without further subgrouping
Kekkonen MHT = modal/median haplotype of a group of tested persons
12345 Kekkonen = haplotype of a real tested person
54321 Kokkonen = haplotype of a real tested person, whose grouping is uncertain
11 = original STR repeat value
10 = mutated STR repeat value (11 > 10)
10 = currently occurred new mutation (11 > 10)
11 = back mutation (11 > 10 > 11)
10 10 = twin mutation (11 11 > 10 10); TGD = 1
13 = double mutation (11 > 13); TGD = 1
10 = shared mutation, which is in a slow enough marker to hint about possible new subgroup
10 = possibly individual mutation
M417+ = earlier in the lineage occurred SNP-mutation
M417+ = currently in the lineage occurred SNP-mutation
M198– = Confirmed lack of SNP-mutation representing a different lineage
(M417+) = supposedly occurred SNP-mutation, predicted on the basis of STR repeat values

0. R1a M198–, M417–

13 25 15 10 12-13 12 13 12 13 13 31 16 09-09 11 11 25 16 20 33 12-16-16-16 10 11 19-23 15 16 20 18
35-38 11 11 11 08 15-17 08 11 10 08 12 10 12 22-22 17 10 12 12 15 08 12 22 23 13 12 11 13 11 11 12 13
33 15 09 15 12 26 27 19 12 11 12 12 10 09 12 11 10 11 11 30 12 14 24 14 09 10 18 15 20 12 22 16 12 15
24 12 23 19 10 15 17 09 11 11

N86494 Shpakovsky Belarus/Poland

13 25 15 10 12-12 12 13 12 13 13 31 16 09-09 11 11 25 16 20 34 13-16-16-16 10 11 19-23 15 16 20 18
35-38 11 11 11 08 15-17 08 11 10 08 12 10 12 22-22 17 10 12 12 15 08 12 22 23 13 12 11 14 11 11 12 13
36 13 09 15 12 25 27 19 12 11 12 12 10 09 11 10 10 11 11 29 12 14 23 13 09 10 22 15 18 12 23 13 12 15
24 12 24 18 11 14 18 09 11 11

208954 Baev Russia

13 26 15 10 12-13 12 13 12 13 13 31 16 09-09 11 11 26 16 20 33 12-16-16-16 10 11 19-23 15 16 20 17
35-37 11 11 11 08 15-17 08 11 10 08 12 10 12 22-22 18 10 12 12 15 08 12 22 23 13 12 11 13 11 11 12 13

1.A* R1a1a M198+, M417–

13 25 15 10 12-14 12 12 10 13 13 30 16 09-09 11 11 25 14 19 31 12-15-15-16 10 11 19-23 15 16 17 19
35-40 12 11 11 08 17-17 08 11 10 08 12 10 12 22-22 15 10 12 12 13 08 13 23 22 12 12 11 13 11 11 12 13

1.A. Old European M198+, M417–

13 25 15 11 13-14 12 12 10 13 13 30 16 09-09 10 11 25 14 19 31 12-15-15-15 10 11 19-23 15 16 17 19
36-40 12 11 11 08 17-17 08 11 10 08 12 10 12 22-22 15 10 12 12 13 08 13 23 22 12 12 11 13 11 11 12 12

2* M417 M198+, **M417+**, CTS4385–, Z283–

13 25 15 10 11-14 12 12 10 13 11 30 16 09-09 11 11 24 14 19 31 12-15-15-16 10 11 19-23 15 16 17 19
35-40 12 11 11 08 17-17 08 11 10 08 12 10 12 22-22 15 10 12 12 13 08 13 23 22 12 12 11 13 11 11 12 13

2. CTS4385 M198+, M417+, **CTS4385+**

13 25 16 10 11-14 12 12 10 13 11 30 15 09-10 11 11 24 14 19 31 12-15-15-16 11 11 19-23 15 15 18 19
33-37 12 11 11 08 17-17 08 12 10 08 12 10 12 22-22 15 10 12 12 14 08 14 23 22 12 12 11 13 11 11 12 13

3.A. Z283 M198+, M417+, **Z283+,** Z282–

13 25 15 10 11-14 12 12 10 13 11 30 16 09-09 11 11 24 14 20 33 12-15-15-16 10 11 19-23 16 16 17 19
35-40 13 11 11 08 17-17 08 11 10 08 11 10 12 22-22 15 10 12 12 13 08 13 23 22 12 12 11 13 11 11 12 13
33 15 09 15 12 26 27 19 12 11 12 12 10 09 12 11 10 11 11 30 12 13 24 14 09 10 18 15 19 11 23 15 12 15
24 12 23 19 10 15 17 09 11 11

3.B. Z282 M198+, M417+, Z283+, **Z282+**

13 25 15 10 11-14 12 12 10 13 11 30 16 09-10 11 11 24 14 20 33 12-15-15-16 11 11 19-23 16 16 18 19
34-39 13 11 11 08 17-17 08 12 10 08 11 10 12 22-22 15 10 12 12 13 08 14 23 21 12 12 11 13 11 11 12 12
31 15 09 15 12 26 27 19 12 12 12 12 10 09 12 11 10 11 11 30 12 13 24 14 09 10 19 15 19 11 23 15 12 15
24 12 23 19 10 15 17 09 11 11

3.B* M198+, M417+, Z283+, Z282+

13 25 15 10 11-14 12 12 10 13 11 30 16 09-10 11 11 24 14 20 33 12-15-15-16 11 11 19-23 16 16 19 18
34-37 13 11 11 08 17-17 08 12 10 08 11 10 12 22-22 15 10 12 12 13 08 14 23 21 12 12 11 13 11 11 12 12
31 15 09 15 12 26 27 19 12 12 12 12 10 09 12 11 10 11 11 30 11 14 24 14 09 10 19 15 19 11 23 14 12 15
24 12 23 19 10 15 17 09 11 11

4. M198+, M417+, Z283+, Z282+, **M458+**

13 25 15 10 11-14 12 12 10 13 11 30 16 09-10 11 11 24 14 20 33 12-15-15-16 11 11 19-23 16 16 19 18
34-37 13 11 11 08 17-17 08 12 10 08 11 10 12 22-22 15 10 12 12 13 08 14 23 21 12 12 11 13 11 11 12 12
31 15 09 15 12 26 27 19 12 12 12 12 10 09 12 11 10 11 11 30 11 14 24 14 09 10 19 15 19 11 23 14 12 15
24 12 23 19 10 15 17 09 11 11

4.A. West Slavic M198+, M417+, Z283+, Z282+, M458+, **L260+**

13 25 17 10 10-14 12 12 10 13 11 30 16 09-10 11 11 23 14 20 31 12-15-16-16 11 11 19-23 16 16 18 19
34-40 13 11 11 08 17-17 08 12 10 08 12 10 12 22-22 15 10 12 12 13 08 14 25 21 12 12 11 13 12 11 12 13
31 15 09 15 12 26 27 19 12 12 12 12 10 09 12 11 10 11 11 30 12 14 24 13 09 10 19 15 19 12 23 14 12 15
24 12 23 19 10 15 17 09 11 11

Oder

13 25 17 10 10-14 12 12 10 13 11 30 16 09-10 11 11 23 14 20 31 12-15-16-16 11 11 19-23 15 16 18 19
34-40 13 11 11 08 17-17 08 12 10 08 13 10 12 22-22 15 10 12 12 13 08 14 25 21 12 12 11 13 12 11 12 13

Wielkopolska / Greater Poland (69461 +4; N3662 +3)

13 25 17 10 10-14 12 12 10 13 11 30 17 09-10 11 11 23 14 20 31 12-15-16-16 11 11 19-23 15 16 18 19
34-41 13 11 11 08 17-17 08 12 10 08 13 10 12 22-22 15 10 12 12 13 08 14 25 21 12 12 11 13 12 11 12 13

Exile (Finland, Southern Ostrobothnia)

13 25 15 10 10-14 12 12 10 13 11 30 16 09-10 11 11 23 14 20 31 12-15-16-16 11 11 19-23 15 16 17 19
35-38 13 11 11 08 15-17 08 12 10 08 13 10 12 22-22 15 10 12 12 12 08 14 25 20 12 12 11 13 12 11 12 13

188716 Kumpumäki

13 25 15 10 **10**-**14** 12 **12** **10** 13 **11** **30** 16 **10**-**10** 11 11 **23** **14** **20** **31** **16**-**16**-16 **11** 11 19-23 **16** 16 **17** **19**
39-**39** **13** 11 11 08 **15**-17 08 **12** 10 08 **13** 10 12 22-22 **15** 10 12 12 **12** 08 **14** **25** **20** **12** 12 11 13 **12** 11 12 **13**

214468 Reko

13 25 15 10 **10**-**14** 12 **12** **10** 13 **11** **30** 16 09-**10** 11 11 **23** **14** **20** **31** 12-**15**-**16**-16 **11** **12** 19-23 **15** 16 **17** **19**
35-**38** **13** 11 11 08 **15**-17 08 **12** 10 08 **13** 10 12 22-22 **15** 10 12 12 **12** 08 **15** **27** **20** **12** 12 11 13 **12** 11 12 **12**

B2083 Lassila Evijärvi SOB FIN

13 25 15 10 **10**-**14** 12 **12** **10** **14** **11** 31 16 09-**10** 11 11 **23** **14** **20** **30** 12-**15**-**16**-16 **11** 11 19-23 **15** 16 **18** **19**
34-**38** **13** 11 11 08 **15**-17 08 **11** 10 08 **13** 10 12 22-22 **15** 10 12 12 **12** 08 **14** **24** **20** **12** 12 11 13 **12** 11 12 **13**

200354 Åhman Mustasaari SOB FIN

13 25 15 10 **10**-**15** 12 **12** **10** 13 **11** **30** 16 09-**10** 11 11 **23** **14** **20** **31** 12-**15**-**16**-16 **11** 11 19-23 **16** 16 **17** **19**
33-**40** **13** 11 11 08 **15**-17 08 **12** 10 08 **13** 10 12 22-22 **15** 10 12 12 **12** 08 **15** **25** **20** **12** 12 11 13 **12** 11 12 **13**

108365 ?

13 25 15 10 **10**-**15** 12 **12** **10** 13 **12** **30** 16 09-**10** 11 11 **23** **14** **21** **31** 12-**15**-**16**-16

188095 ?

13 25 15 10 **10**-**14** 12 **12** **10** 13 **11** **30**

5. Z280 M198+, M417+, Z283+, Z282+, **Z280+**

13 25 15 10 **11**-**14** 12 **12** **10** 13 **11** **30** 16 09-**10** 11 11 **24** **14** **20** **33** 12-**15**-**15**-16 **11** 11 19-23 **16** 16 **18** **19**
34-**39** **13** 11 11 08 **17**-17 08 **12** 10 08 **11** 10 12 22-22 **15** 10 12 12 **13** 08 **14** **23** **21** **12** 12 11 13 11 11 12 **12**
31 15 09 15 12 26 27 19 12 **12** 12 12 10 09 12 11 10 11 11 30 12 **13** 24 **13** 09 10 **19** 15 **19** **11** **23** **15** 12 15
24 12 23 19 10 15 17 09 11 11

6.A. Balto-Polish M198+, M417+, Z283+, Z282+, Z280+, **CTS1211+, CTS3607+**

13 25 **16** **11** **11**-**14** 12 **12** **10** 13 **11** **30** **15** 09-**10** 11 11 **24** **14** **20** **33** 12-**15**-**15**-16 **11** 11 19-23 **16** 16 **18** **19**
34-**39** **13** 11 11 08 **17**-17 08 **12** 10 08 **11** 10 12 22-22 **15** 10 12 12 **13** 08 **14** **23** **21** **12** 12 11 13 11 11 12 **13**
33 15 09 15 12 26 27 19 12 **12** 12 12 10 09 12 11 10 11 11 30 12 **14** 24 **14** 09 10 **19** 15 **19** **11** **23** **16** 12 15
24 12 23 19 10 15 17 09 11 11

6.A1. Poland

13 25 **16** **10** **11**-**14** 12 **12** **11** 13 **11** **30** **15** 09-**10** 11 11 **24** **14** **20** **31** 12-**15**-**15**-16 **11** **12** 19-23 **16** 16 **18** **18**
34-**39** **13** 11 11 08 **17**-17 08 **12** 10 08 **11** 10 12 22-22 **15** 10 12 12 **13** 08 **14** **23** **21** **12** 12 11 13 11 11 12 **13**
33 15 09 15 12 26 27 19 12 **12** 12 12 10 09 12 11 10 11 11 **28** 12 **14** 24 **13** 09 10 **21** 15 **19** **11** **23** **16** 12 15
24 12 23 19 10 15 17 09 11 11

225697 Rapcewicz POL

13 25 **17** **10** **11**-**14** 12 **12** **12** **14** **11** **31** **15** **10**-**10** 11 11 **24** **14** **20** **31** 12-**15**-**15**-16 **11** **11** 19-23 **16** 16 **17** **18**
34-**38** **12** 11 11 08 **17**-17 08 **12** 10 08 **10** 10 12 22-22 **15** 10 12 12 **13** 08 **14** **24** **21** **14** 12 11 13 **12** 11 12 **13**
35 **14** 09 15 12 **27** 27 19 12 **12** 12 12 10 09 12 11 10 11 11 **28** 12 **14** 24 **14** 09 10 **21** 15 **20** **11** **23** **16** 12 15
23 12 23 19 **11** 15 **19** 09 11 11

6.A1A. East-Central Europe

13 25 **15** **10** **11**-**15** 12 **12** **11** 13 **11** **29** **15** 09-**10** 11 11 **24** **14** **20** **31** 12-**15**-**15**-16 **11** **12** 19-23 **18** 16 **17** **19**
35-**38** **13** 11 11 08 **17**-17 08 **12** 10 08 **11** **11** 12 22-22 **15** 10 12 12 **13** 08 **14** **23** **21** **12** 12 11 13 **12** 11 12 **13**
33 15 09 15 12 26 27 19 12 **12** **11** **11** 10 09 12 11 10 11 11 **28** 12 **14** 24 **13** 09 10 **21** 15 **19** **11** **23** **15** 12 15
24 12 23 19 10 15 17 09 11 11

6.A1B. Eastern Europe

13 25 **16** **10** **11**-**14** 12 **12** **11** 13 **11** **30** **15** 09-**10** 11 11 **24** **14** **20** **31** 12-**15**-**15**-16 **11** **12** 19-23 **16** 16 **18** **18**
34-**39** **13** 11 11 08 **17**-17 08 **12** 10 08 **11** 10 12 22-22 **15** 10 12 12 **13** 08 **14** **23** **21** **12** 12 11 13 11 11 12 **13**
33 15 09 15 12 26 27 19 12 **12** 12 12 10 09 12 11 10 11 11 **28** 12 **13** 24 **13** 09 10 **21** 15 **19** **11** **23** **16** 12 15
24 12 23 19 10 15 17 09 11 11

6.A4. Balto-Slavic

13 25 **16** **11** **11**-**14** 12 **12** **10** 13 **11** **30** **15** 09-**10** 11 11 **24** **14** **20** **33** **13**-**15**-**15**-16 **11** 11 19-23 **16** 16 **18** **19**
34-**39** **13** 11 11 08 **17**-17 08 **12** 10 08 **11** 10 12 22-22 **15** 10 12 12 **13** 08 **14** **23** **21** **12** 12 11 13 11 11 12 **13**
32 15 09 15 12 26 27 19 12 **12** 12 12 10 09 12 11 10 11 11 30 12 **14** 24 **13** 09 10 **19** 15 **19** **11** **23** **15** 12 15
24 12 23 19 10 15 17 09 11 11

6.A2* Finnic

13 **24** **15** **11** **11**-**14** 12 **12** **10** 13 **11** **30** **15** 09-**10** 11 11 **24** **14** **20** **33** 12-**15**-**15**-16 **11** **12** 19-23 **16** **17** **18** **19**
34-**39** **14** 11 11 08 **17**-17 08 **12** 10 08 **11** 10 12 22-22 **15** 10 12 12 **13** 08 **12** **23** **21** **12** 12 11 13 11 11 12 **13**
33 15 09 15 12 26 27 19 12 **12** 12 12 10 09 12 11 10 11 11 30 12 **14** 24 **14** 09 10 **19** 15 **19** **11** **23** **16** 12 15
24 12 23 19 10 15 17 09 11 11

223575 Khlopin RUS

13 **24** **15** **11** **11**-**14** 12 **12** **11** 13 **11** **30** **15** 09-**10** 11 11 **24** **14** **20** **33** 12-**15**-**15**-**15** **12** **12** 19-23 **15** **17** **19** **19**
36-**37** **14** 11 11 08 **17**-17 08 **11** 10 08 **11** **11** 12 22-22 **15** 10 12 12 **13** 08 **12** **21** **21** **12** 12 11 13 11 **12** 12 **13**

6.A2. Finland

13 24 15 11 11-14 12 12 10 13 11 30 15 09-09 11 11 24 14 20 33 12-15-15-16 11 12 19-23 16 17 18 19
34-39 14 11 12 08 17-17 08 12 10 08 11 10 12 22-22 15 10 12 12 13 08 12 23 21 12 12 11 13 11 11 12 13
33 15 09 15 12 26 27 19 12 12 12 12 10 09 12 11 10 11 11 30 12 14 24 14 09 10 19 15 19 11 23 16 12 15
24 12 23 19 10 15 17 09 11 11

6.A2A. Karelian

13 24 15 11 11-14 12 12 10 13 11 30 15 09-09 11 11 24 14 20 33 12-15-15-16 11 12 19-23 16 17 18 19
34-38 14 11 12 08 17-17 08 12 10 08 11 10 12 22-22 15 10 12 12 13 08 12 23 21 12 12 11 13 11 11 12 13
33 15 09 15 12 26 27 19 12 11 12 12 10 09 12 11 10 11 11 30 12 14 24 14 09 10 18 15 20 12 22 16 12 15
24 12 23 19 10 15 17 09 11 11

164489 Jeremeiev Suistamo KAR RUS

13 23 15 11 11-14 12 12 10 13 11 30 15 09-09 11 11 24 14 20 33 12-15-16-16 11 12 19-23 16 17 18 19
34-38 14 11 12 08 17-17 08 12 10 08 11 10 12 22-22 15 10 12 12 13 08 12 23 21 12 12 11 13 11 11 12 13
33 15 09 15 12 26 27 19 12 11 12 12 10 09 12 11 10 11 11 30 12 14 24 14 09 10 18 15 20 12 22 16 12 15
24 12 23 19 10 15 17 09 11 11

184035 Jefiminpoika Harlu KAR RUS

13 24 15 11 11-14 12 12 10 13 11 29 15 09-09 11 11 24 14 20 33 12-15-15-16 11 13 19-23 16 17 18 19
35-38 14 11 12 08 17-17 08 11 10 08 11 10 12 22-22 15 11 12 12 13 08 12 23 21 12 12 11 13 11 11 12 13
32 15 09 15 12 26 27 19 12 11 12 12 10 09 12 11 10 11 11 30 12 14 24 14 09 10 18 15 20 12 22 16 12 15
24 12 23 19 10 15 17 09 11 11

6.A2B. Southern Ostrobothnian

13 24 15 11 11-14 12 12 11 13 11 30 15 09-09 11 11 23 14 20 32 12-15-15-16 11 12 19-23 16 17 18 19
34-39 14 11 12 08 17-17 08 12 10 08 11 10 12 22-22 15 10 12 12 13 08 12 23 21 12 14 11 13 11 11 12 13
31 15 09 17 12 27 27 19 12 12 12 12 10 09 12 11 10 11 11 30 12 12 25 13 09 10 20 15 19 11 23 15 13 15
25 12 23 19 10 15 17 09 11 11

177614 Rasula Kuortane EPM FIN

13 24 15 11 11-14 12 12 11 13 11 30 15 09-09 11 11 23 14 20 32 12-15-15-16 11 12 19-23 16 17 18 19
35-40 14 11 12 08 17-17 08 12 10 08 11 10 12 22-22 15 10 12 12 13 08 12 23 21 12 14 11 13 11 11 12 13

SOB-II

13 24 15 11 11-14 12 12 11 13 11 30 15 09-09 11 11 23 14 20 32 12-15-15-16 11 13 19-23 16 17 18 19
34-39 14 11 12 08 17-17 08 12 10 08 11 10 12 22-22 15 10 12 12 13 08 12 23 21 12 14 11 13 11 11 12 13

211899 Mikkilä Kuortane EPM FIN

13 24 15 11 11-14 12 12 11 13 11 30 15 09-09 11 11 23 14 20 32 12-15-15-16 11 13 19-23 16 17 18 17
34-38 14 11 12 08 17-17 08 12 10 08 11 10 12 22-22 15 10 12 12 13 08 12 23 21 12 14 11 13 11 11 12 13

SOB-III

13 24 15 11 11-14 12 12 11 13 11 31 15 09-09 11 11 23 14 20 32 12-15-15-16 11 13 19-23 16 17 18 19
34-39 14 11 12 08 17-17 08 12 10 08 11 10 12 22-22 15 10 12 12 13 08 12 23 21 12 14 11 13 11 11 12 13

146958 Kalliokoski Lapua EPM FIN

13 24 15 11 11-14 12 12 11 13 11 31 15 09-09 10 11 23 14 20 31 12-15-15-16 11 13 19-23 16 17 18 18
35-39 14 11

N12214 Mynt Lapua EPM FIN

13 24 15 11 11-14 12 12 11 13 11 31 15 09-09 11 11 23 14 20 32 12-15-15-16 11 13 19-23 16 17 17 19
34-39 14 11 12 08 17-17 08 12 10 08 11 10 12 22-22 15 10 12 12 13 08 12 23 21 12 14 11 13 11 11 12 13
31 15 09 17 12 27 27 19 12 12 12 12 10 09 12 11 10 11 11 30 12 12 25 13 09 10 20 15 19 11 23 15 13 15
25 12 23 19 10 15 17 09 11 11

105382 Saari Alavus EPM FIN

13 24 15 11 11-14 12 12 11 13 11 31 15 09-09 11 11 23 14 20 32 12-15-15-16 11 13 19-23 16 17 17 19
34-39 14 11

Time depth of the Finnic group

It is difficult to reach reliable datings with only few haplotypes: the number of haplotypes is greatest with 37 markers and diminishes to 67 and still more to 111 markers (because all higher numbers can be used with lower number of markers, too), but the number of markers is greatest with 111 markers. It is only a matter of chance whether a mutation occurs among the first or among the last markers, so in practice some haplotypes are similar with 37 than 67 markers – and still 3/37 yields 33 generations as a time-depth, while 3/67 yields only 24 generations.

111 markers should be more credible, because the more there are markers, the less probable it is that many generations pass without any mutations. If we count the probability **not** to have any mutations after 10 generations, with 37 markers it is $(1 - 0.09 =) 0.91^{10}$ = **39 %**, with 67 markers it is $(1 - 0.12 =) 0.88^{10}$ = **28 %** and with 111 markers it is $(1 - 0.20 =) 0.80^{10}$ = **11 %**. The probability to have zero mutations still after 20 generations is with 37 markers **15 %**, with 67 markers **8 %** and with 111 markers only **1 %**.

(Sub)group	Average TGD from the founder haplotype	Mut. rate (*Rozhanskii & Klyosov 2011*)	Generations (G) ago	Years ago (G = 25–30 years)
SOB-III	2/37	**12:** 0.02 = 1M/50G	22	550–660
SOB-II	2,75/37	**25:** 0.046 = 1M/22G	30,25	756–908
South OstB.	3,4/37 // 2,67/67	**37:** 0.09 = 1M/11G	37,4 / 21,36	935–1122 / 534–641
Karelian	2,5/37 // 3,5/67 // 4/111	**67:** 0.12 = 1M/8G	27,5 / 28 / 20	688–825 / 700–840 / 500–600
6.A2 Finland	5,6/37 // 5,8/67 // 11,67/111	**111:** 0.20 = 1M/5G	61,6 / 46,4 / 58,35	1540–1848 / 1160–1392 / 1459–1751
6.A2* Finnic	Kh: 11/67 // Finland: 7,8/67 / 13,67/111		88 / 62,4 / 68,35	2200–2640 / 1560–1872 / 1709–2051
6.A Balto-Pol.	R: 21/111 // Finnic: 13,8/67 / 19,67/111		105 / 190,4 / 98,35	2625–3150 / 4760–5712 / 2459–2951

For example the average TGD of SOB-III is (4 + 1 + 1) : 3 = 2 per 37 markers. When we calculate the previous level SOB-II, all the three get +1 (the one STR-mutation of SOB-III), and Mikkilä (+2) is added: (5 + 2 + 2 + 2) : 3 = 2,75 per 37 markers.

As the 111 marker set seems to be the most credible basis for dating, so far lacking only in the number of haplotypes, I will concentrate on it. The most recent common ancestor for **6.A Balto-Polish** group seems to go back in time almost 3000 years, based on the 111 marker results of the Finnic group and the very basal haplotype Rapcewicz (R).

The spread of one of its descendant, **6.A* Finnic**, dates to near the beginning of the Christian Era, around 2000 years ago. Basal haplotype Khlopin (Kh) is from Russia, which may point to the land route around the Gulf of Finland.

So far there is only one 111 marker haplotype in the **6.A2B Southern Ostrobothnian** group, but based on 37 and 67 markers it seems to be of equal age with the **6.A2A Karelian group**: probably less than 1000 years. Their common ancestor **6.A2 Finland** is around 1500 years old.

It is interesting that so far there seem to be no basal haplotypes in the Finland group. At the moment we cannot even say for certain, which was the direction of the spread, but the most economical solution is to suppose a "homeland" somewhere near Ladoga, from where also the one Russian basal Finnic haplotype can be explained. The two men of the Karelian group are located on both sides of Ladoga (east and west).

In this case the Southern Ostrobothnian group would have arrived from the southeast. In that group the basal haplotypes are in Kuortane, and only later the descendants of the forefather (founder haplotype) spread to Lapua and Alavus.

Time depth of the Oder group

A second case is a group of six Finnish haplotypes, only four of which consists of 67 markers. Only two of them have announced their place of origin, but both of them are in Southern Ostrobothnia (including Swedish-speaking Ostrobothnia). The age of this group is more than 1000 years based on 67 markers.

This group has its closest brother group in Wielkopolska (Greater Poland) on the Middle Oder, so I named their common parent group the Oder group. I have earlier called this group the Wend group (http://www.elisanet.fi/alkupera/Vendit.html), and now 67 (and 111 where available) markers confirm its origin in the Wend region.

Wend was a name for a variety of West Slavic tribes living in the Southern coast of the Baltic Sea, west and east from Oder (roughly the current border between Germany and Poland), and the route from the Lower Oder to Southern Ostrobothnia has an interesting linguistic equivalent: local family name Ventä (→ Ventälä, Ventelä) corresponds regularly to the dialectal Estonian word *vend : vennä* 'Russian' (< **ventä*). Finnish word for 'Russian' is a metathetic variation of this: **venät : *venäδen* > *venät : venäjän* → Venäjä 'Russia'.

No other folk besides the Finnic speakers ever used the Wend-ethnonym about Russians: it was originally used to denote the West Slavs. Only when the contacts to West Slavs ceased and the contacts with Russians increased, the name was shifted to other Slavs.

Now, the age of the Exiles (*maanpakolaiset* in Finnish) group is around 1000 years, which fits quite nicely with the "exile Wend" -hypothesis, but the age

of the ancestral Oder group seems to be over 2000 years, around the age of Pomeranian Culture and Wielbark Culture.

We cannot say for sure when the ancestor of the Exiles group arrived in Southern Ostrobothnia, but around 1000 years ago his descendants started to increase. He may have arrived much earlier, going through the mutations in Finland, but it is equally possible, that he remained in the Lower Oder region for a long time. The area has gone through many ethnic and political changes, and there are no more than two men remaining in the somewhat younger Wielkopolska group.

(Sub)group	Average TGD from the founder haplotype	Mut. rate (*Rozhanskii & Klyosov 2011*)	Generations (G) ago	Years ago (G = 25–30 years)
Exiles	5,25/67	**12:** 0.02 = 1M/50G	42	1050–1260
Wielkopolska	3,5/67	**25:** 0.046 = 1M/22G	28	700–840
Oder	10/67	**37:** 0.09 = 1M/11G	80	2000–2400
		67: 0.12 = 1M/8G		
		111: 0.20 = 1M/5G