

**Number of descendants and their educational  
outcomes -  
A prospective analysis of multigenerational  
demographic stratification in Northern Sweden in  
the 19<sup>th</sup>, 20<sup>th</sup> and 21<sup>st</sup> centuries.**

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“Who have many children” used to be among the most central questions in early science, and was very central for pioneers of statistics, social science, and biology



# Background

- This study examines two different questions:
  - Who has many children, grandchildren, and great grandchildren?
  - What determines the (educational) success of these descendants?

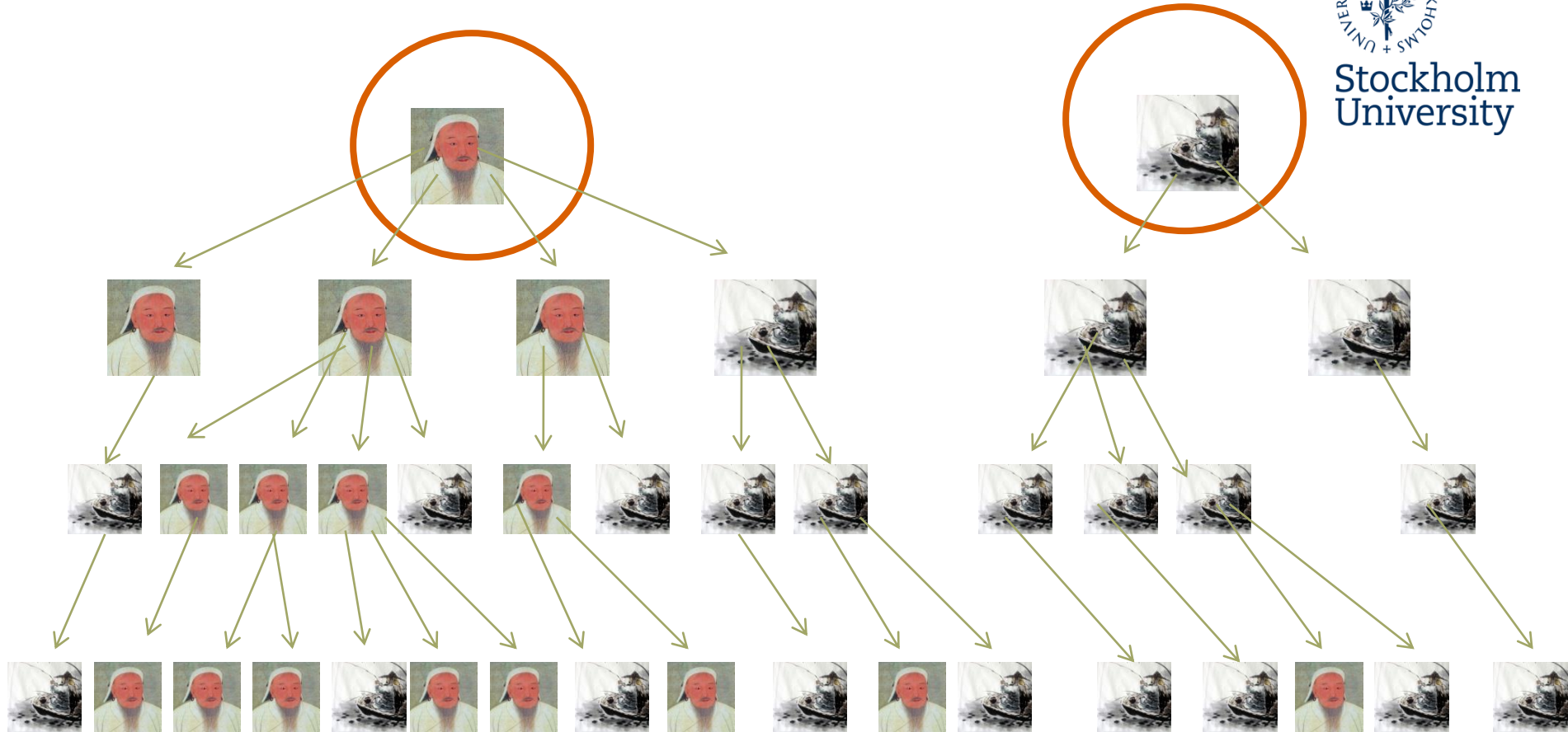
Examining a population of predominantly farmers in 19<sup>th</sup> century Northern Sweden and their descendants in the 20<sup>th</sup> and 21<sup>st</sup> century.



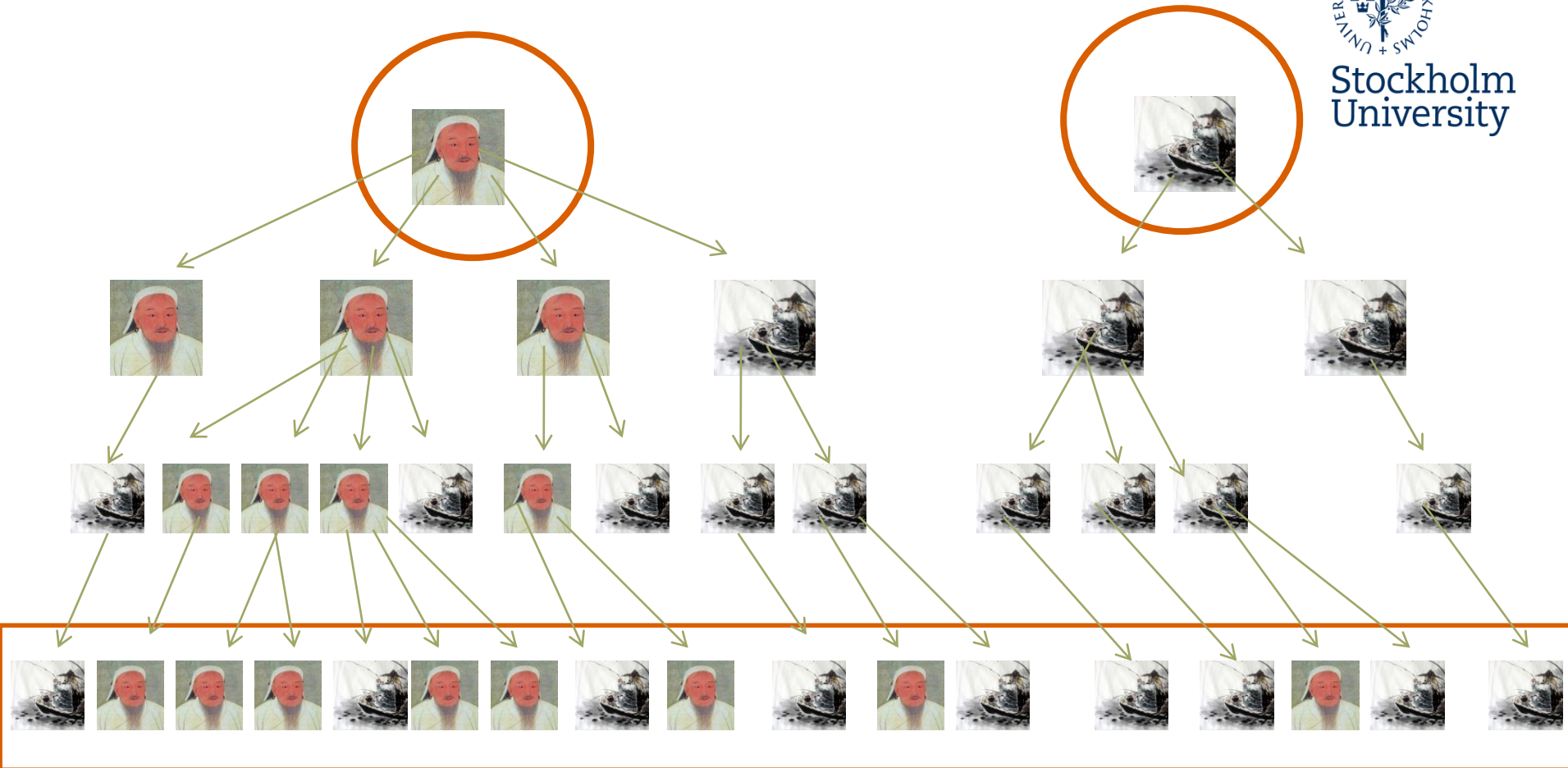
This approach combines demographic differences between groups, socioeconomic stratification, and the interplay between demography and socioeconomic stratification

As the study spans from 1860-2007 the demographic and socioeconomic context has also changed dramatically.









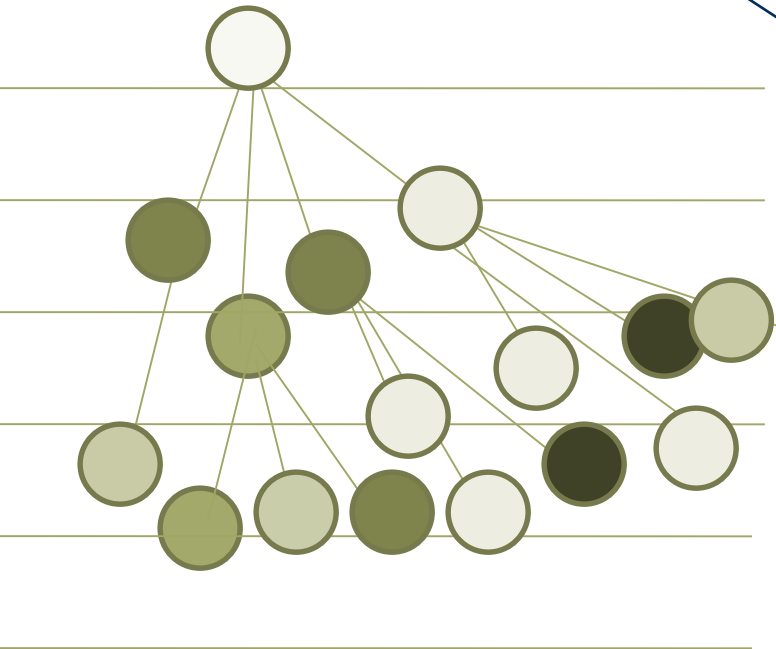


- A key contribution of this study is that we pay particular focus to historical calendar time



Industrial revolution in Sweden =  
agricultural employment from 70% to  
30% of labor force

Fertility transition in Sweden =  
TMFR from 8 to 3



1870

1890

1910

1930

1950

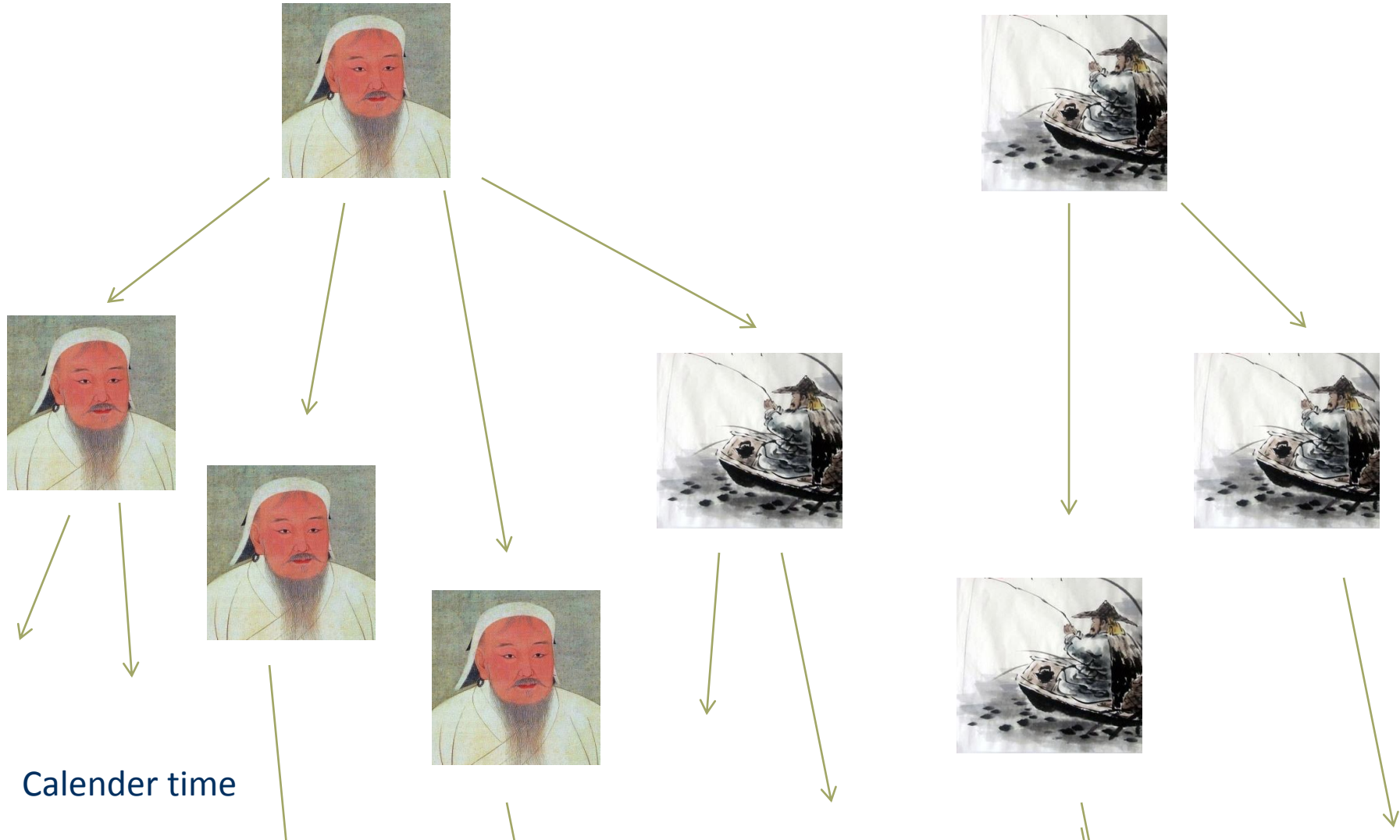
1970

Great depression

Post-war economic boom

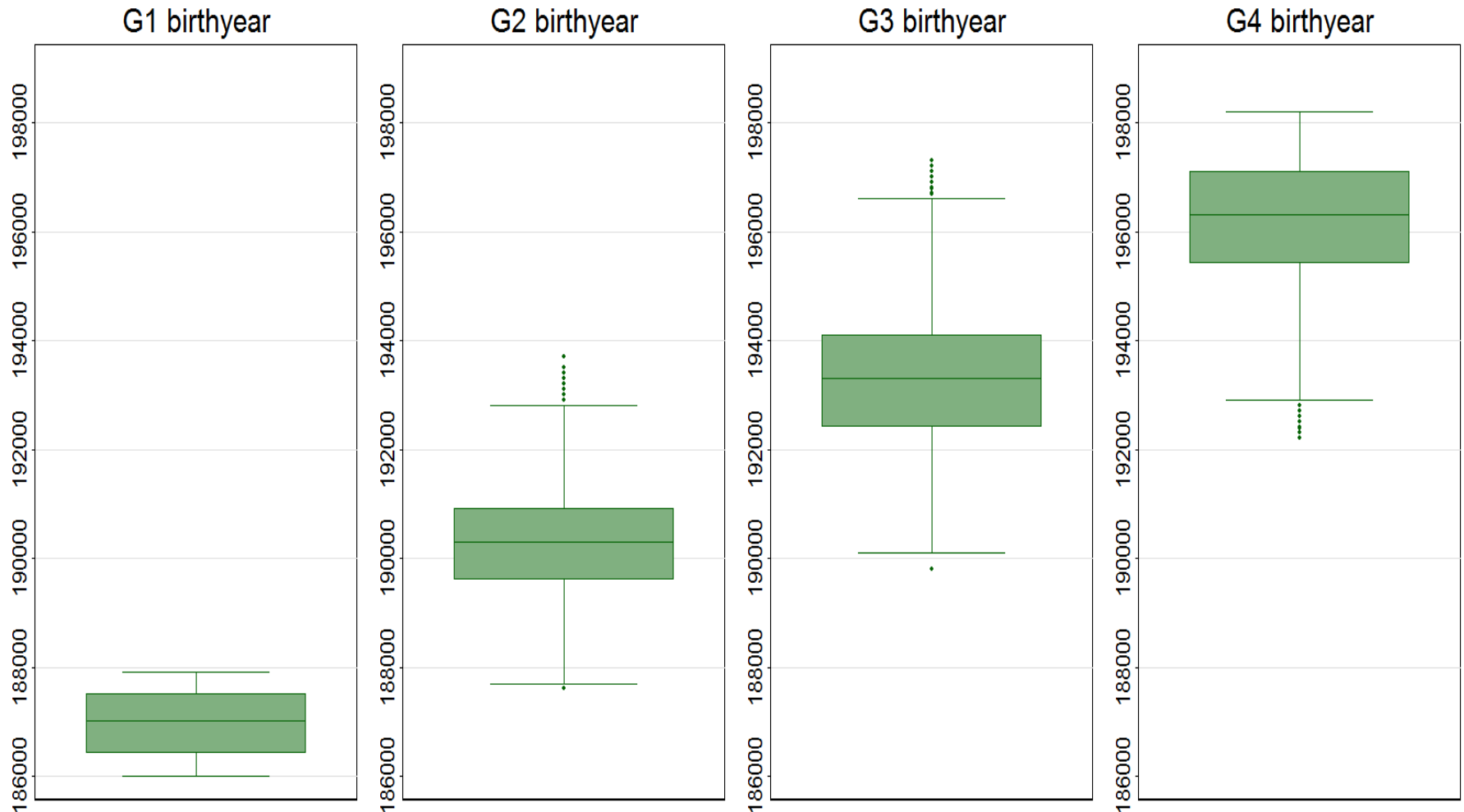


Maybe **when** your descendants are born is more important than **who** they are (their relative socioeconomic characteristics)?

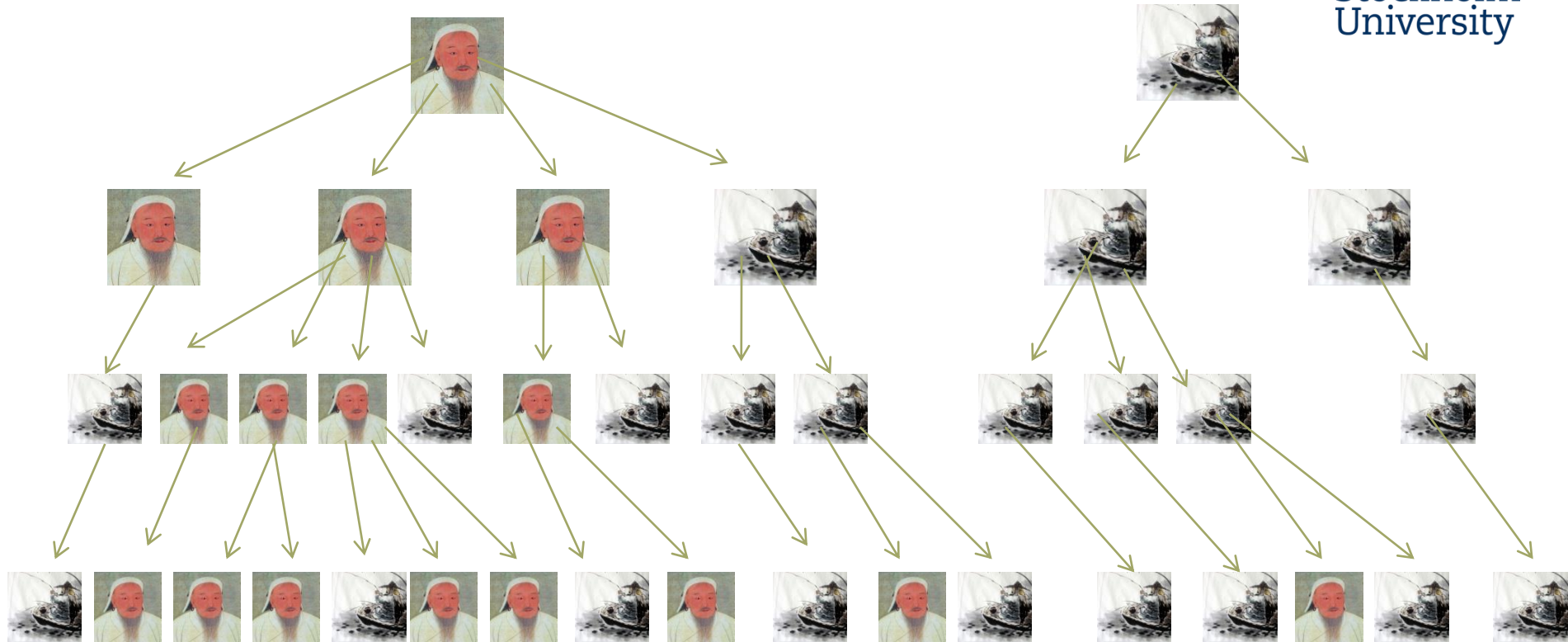




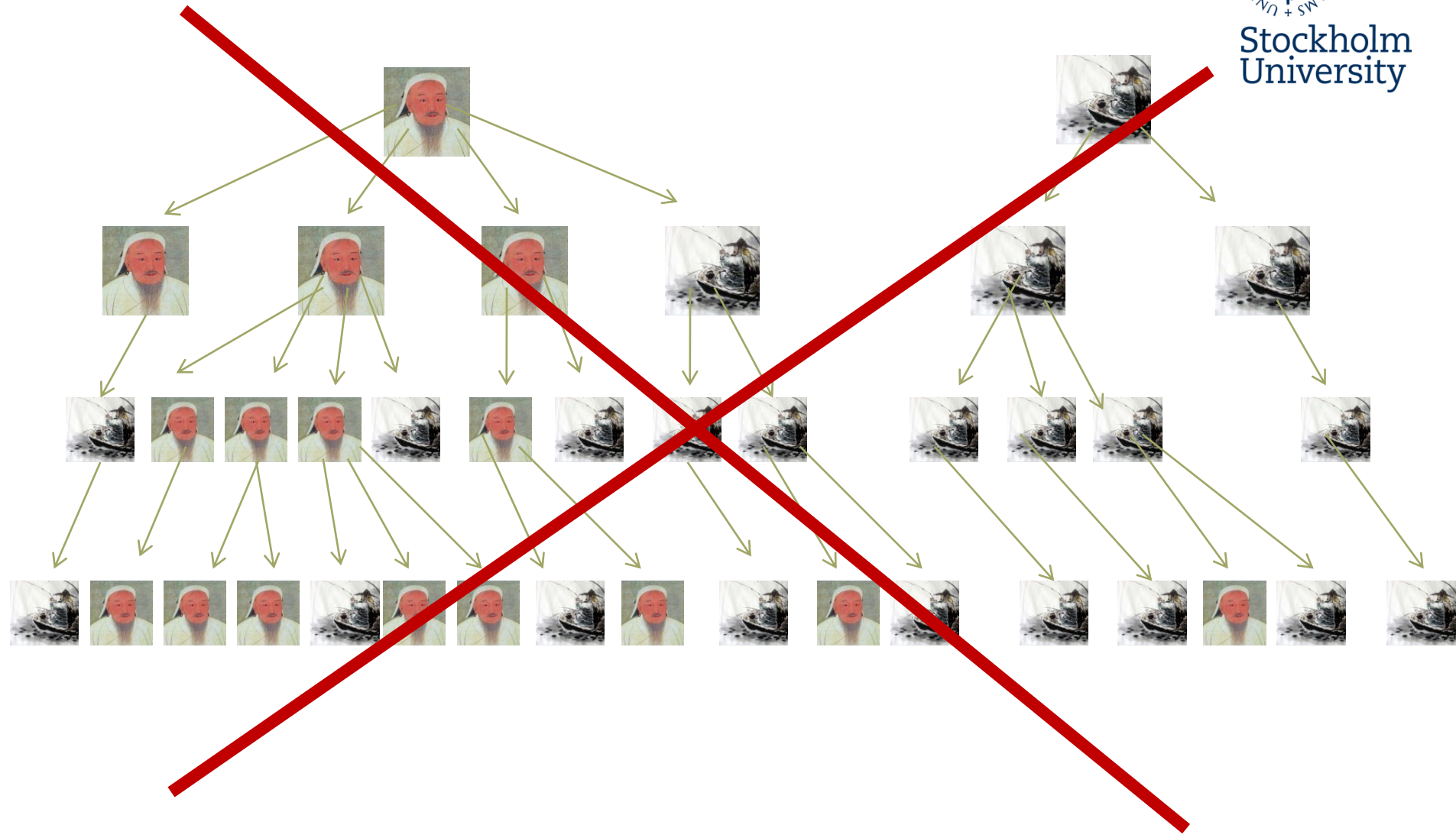
# Box plot of birth year for G1, G2, G3 & G4.



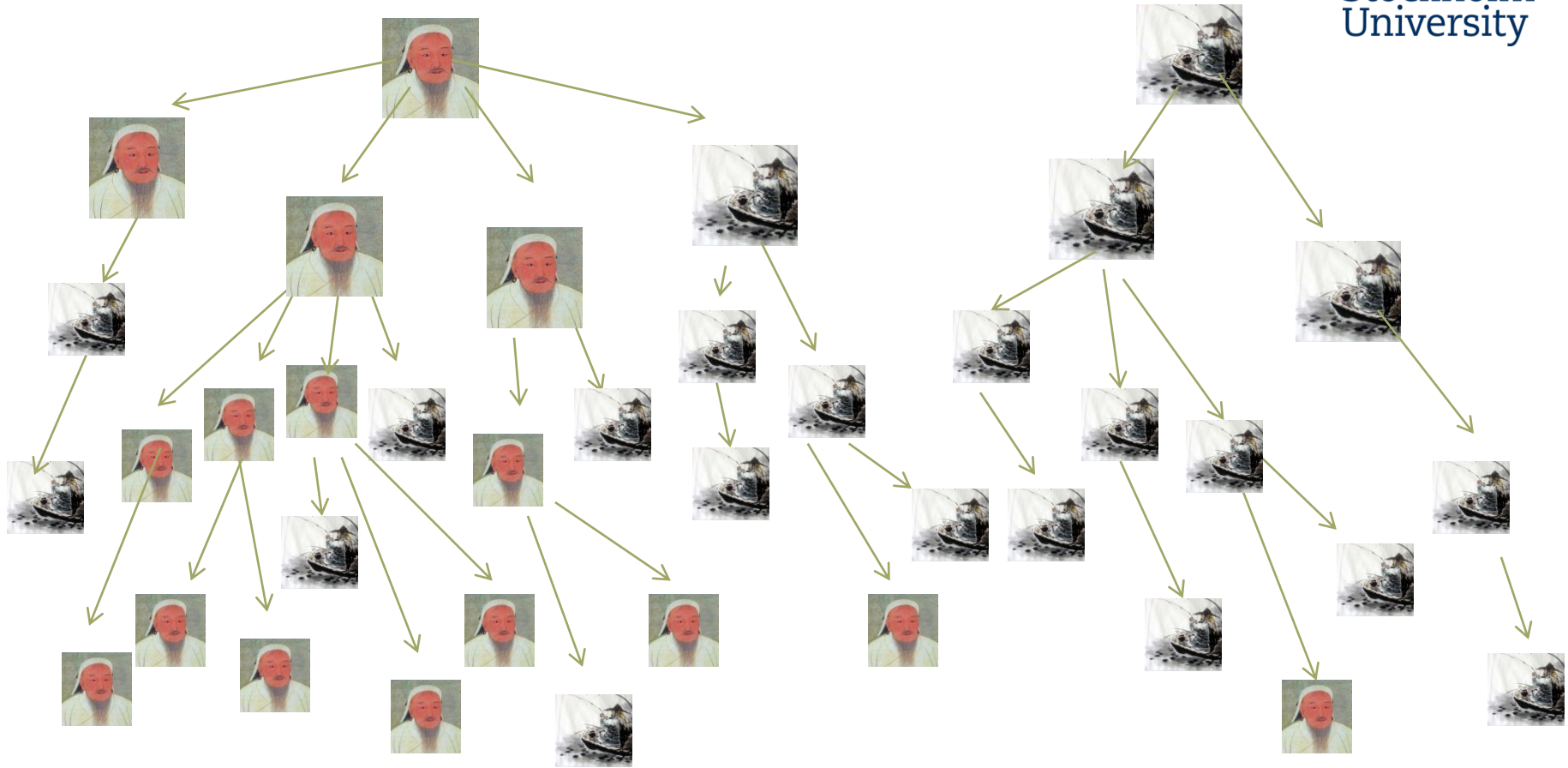




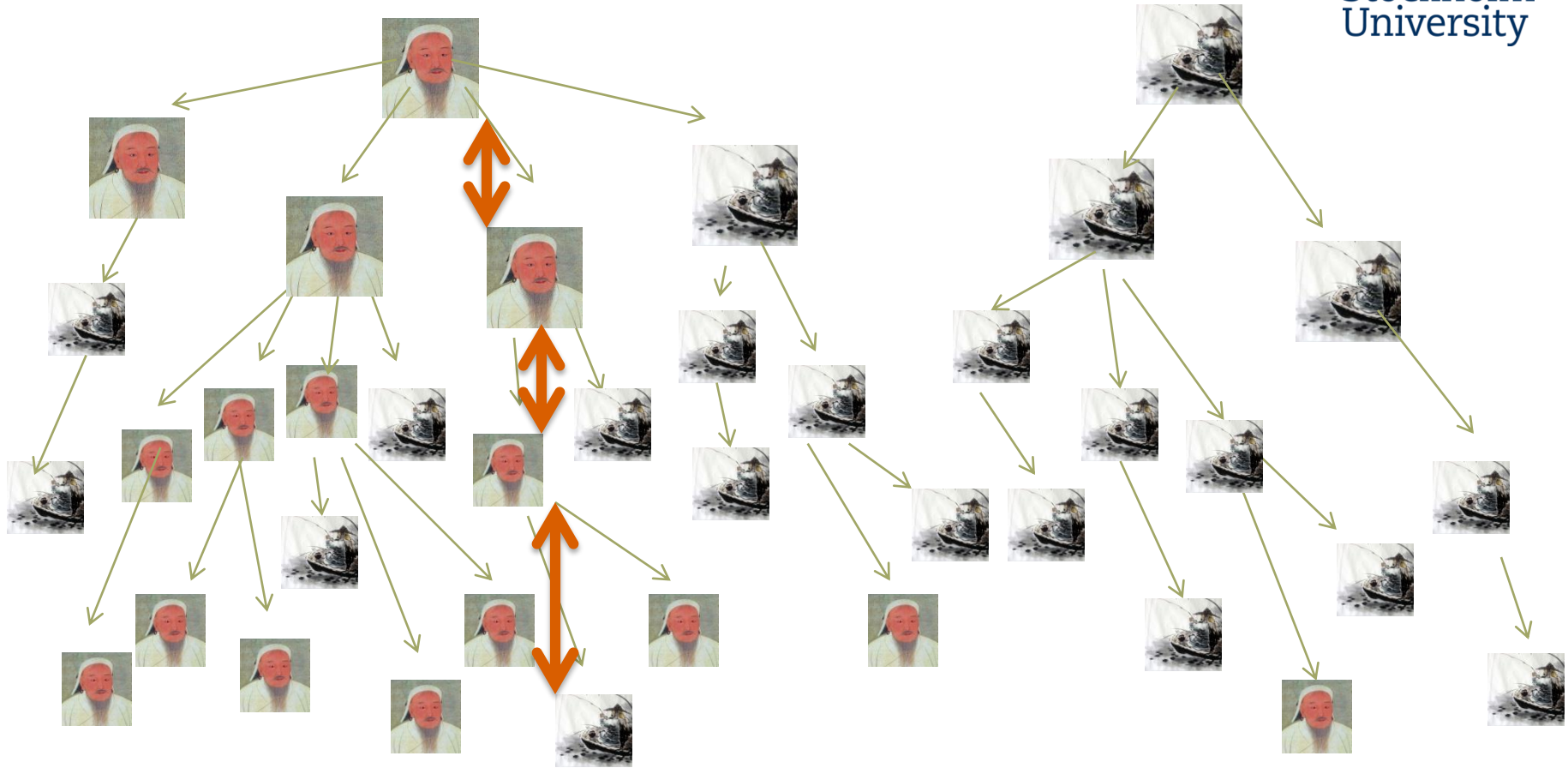
















# Data



# Source of data

- Data from the demographic data base at Umeå University in northern Sweden
- Around 150 000 people between 1720-1950 who spent some of their time in Skellefteå. Around 50 000 can be followed for their entire life.

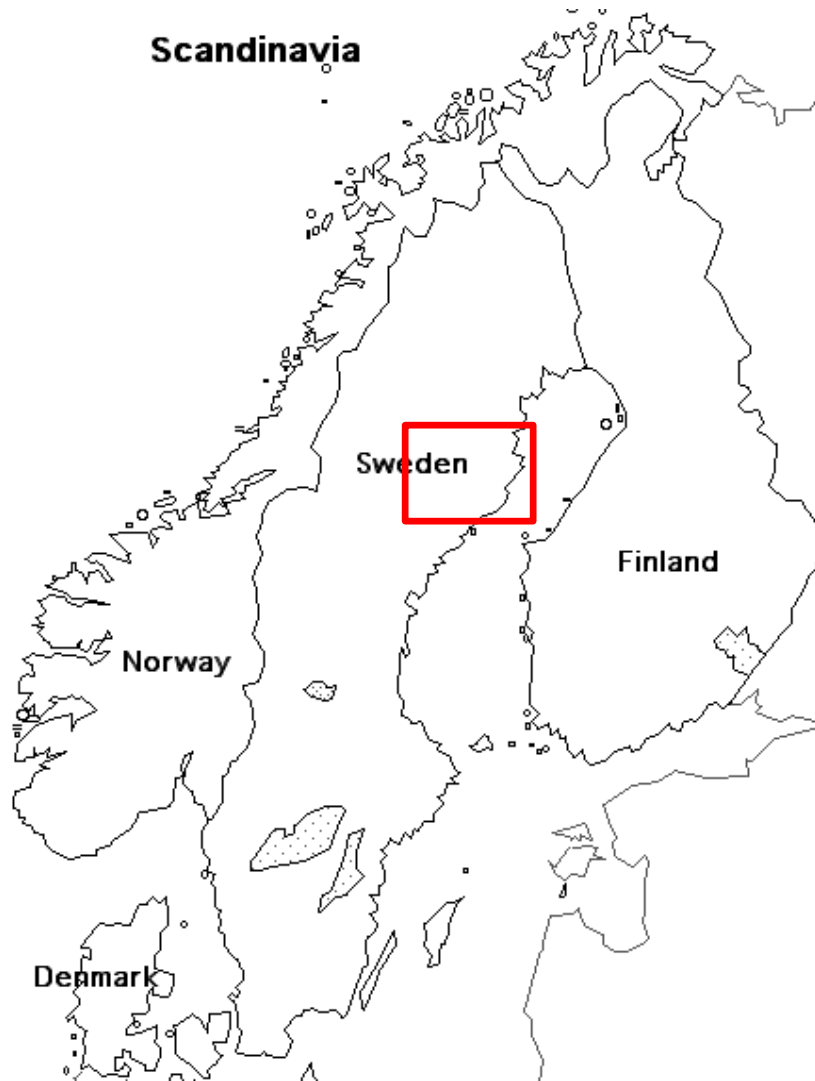
In 1960 historical data is linked with the full population of Sweden from administrative registers



# Skellefteå region



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# Skellefteå region

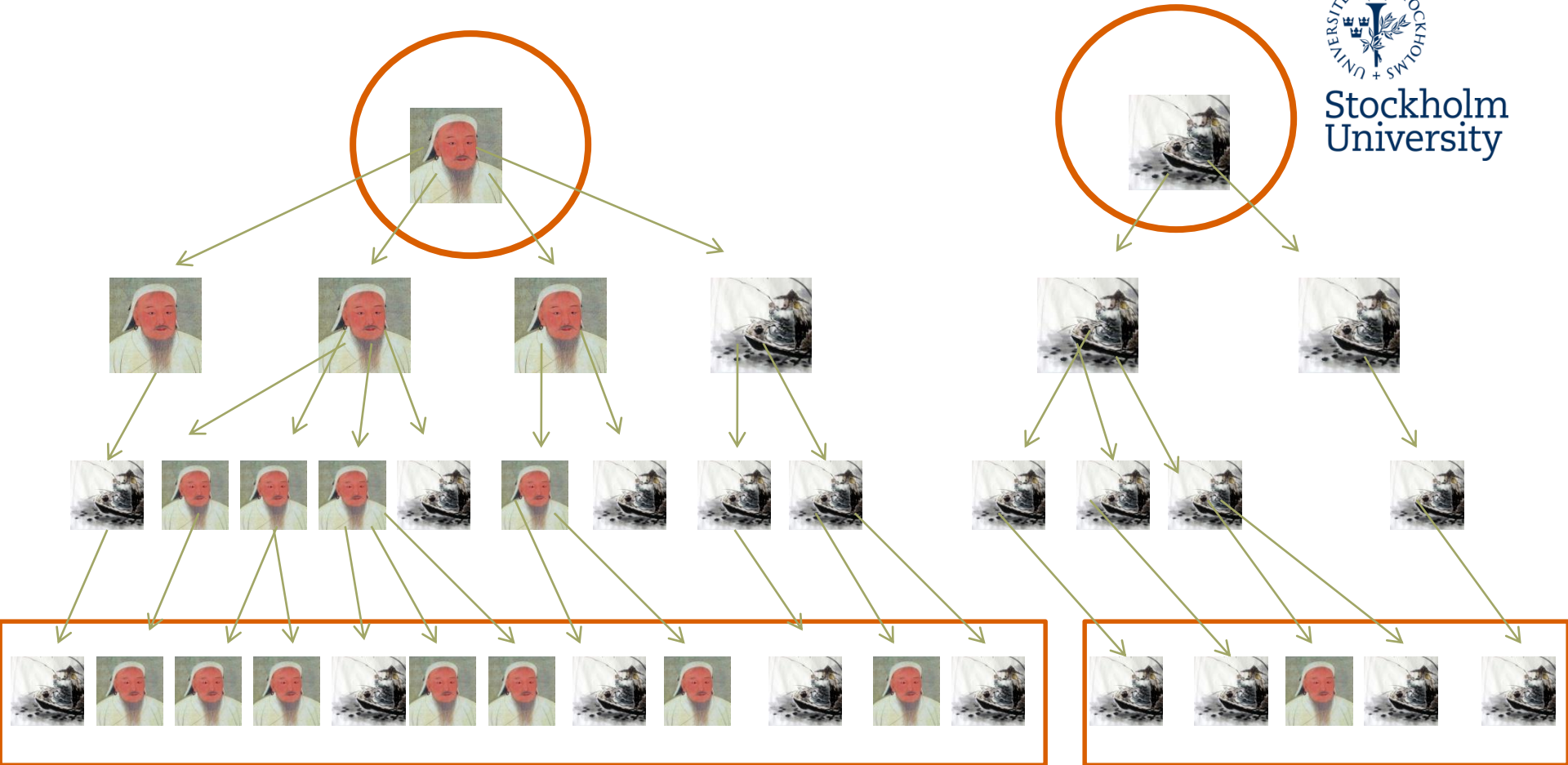
Predominantly agricultural until the end of the 19<sup>th</sup>  
century

High share of farmers with ownership of their own land

Some sawmill industry towards the end of the 19<sup>th</sup>  
century

Early 20<sup>th</sup> century industrialization, important mining  
and metallurgical industry





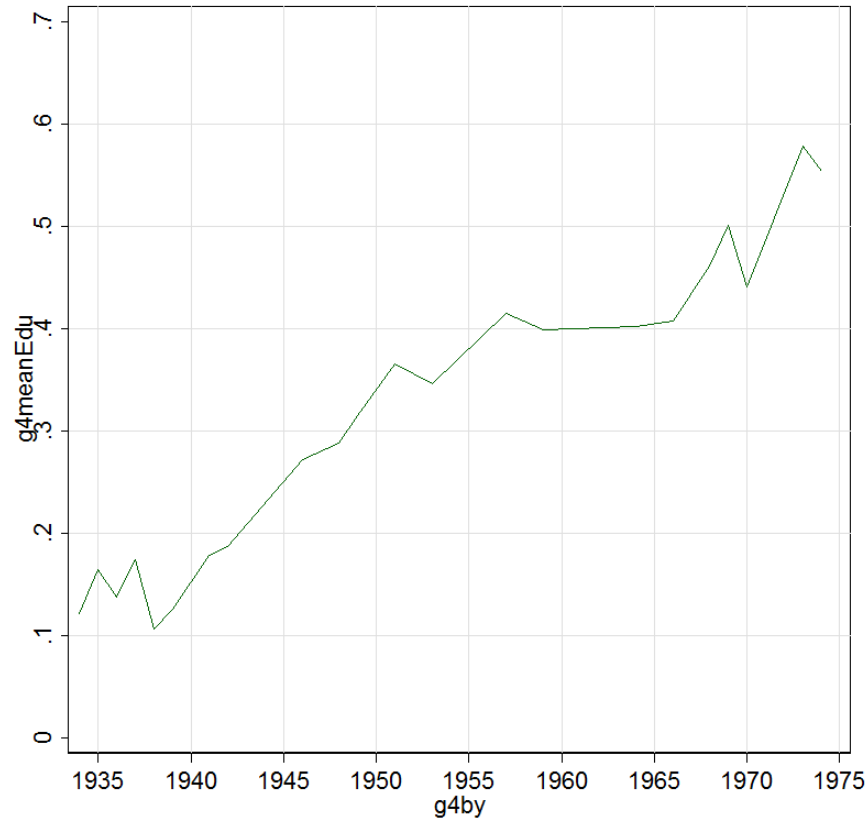
A= number of  +  in G4 (N)

B= number of  in G4 (N)

C= ratio of  / (  +  ) in G4 (%)



# Education (at least 2 years of tertiary education)



192000 194000 196000 198000



G4 birthyear

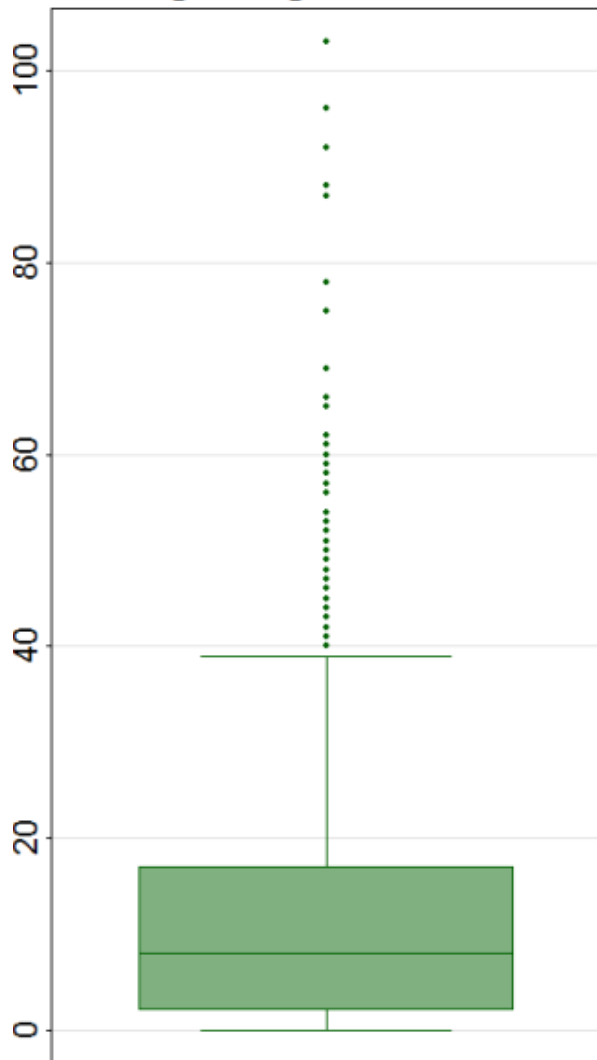




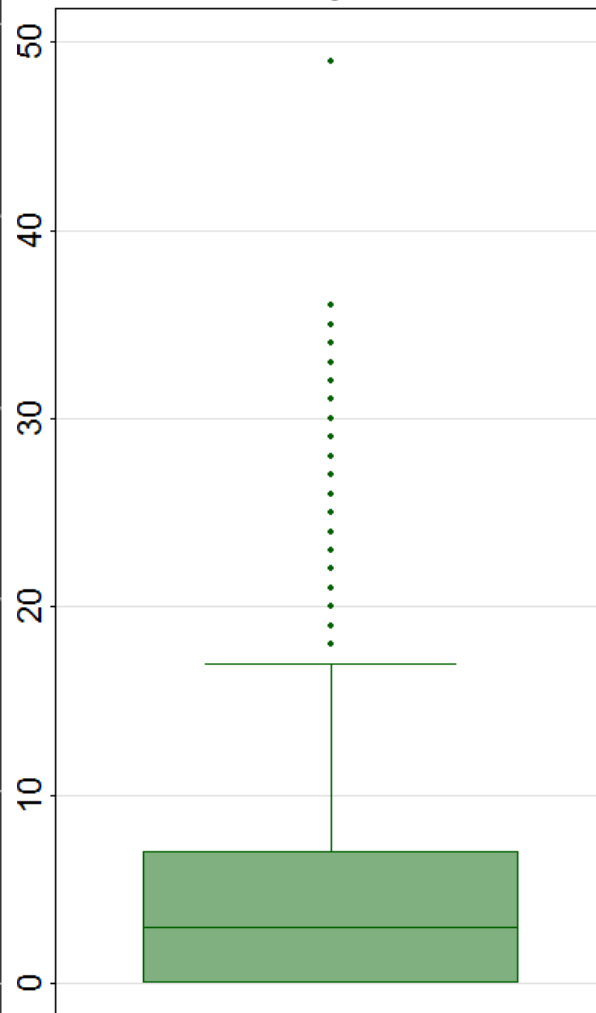
# Preliminary results



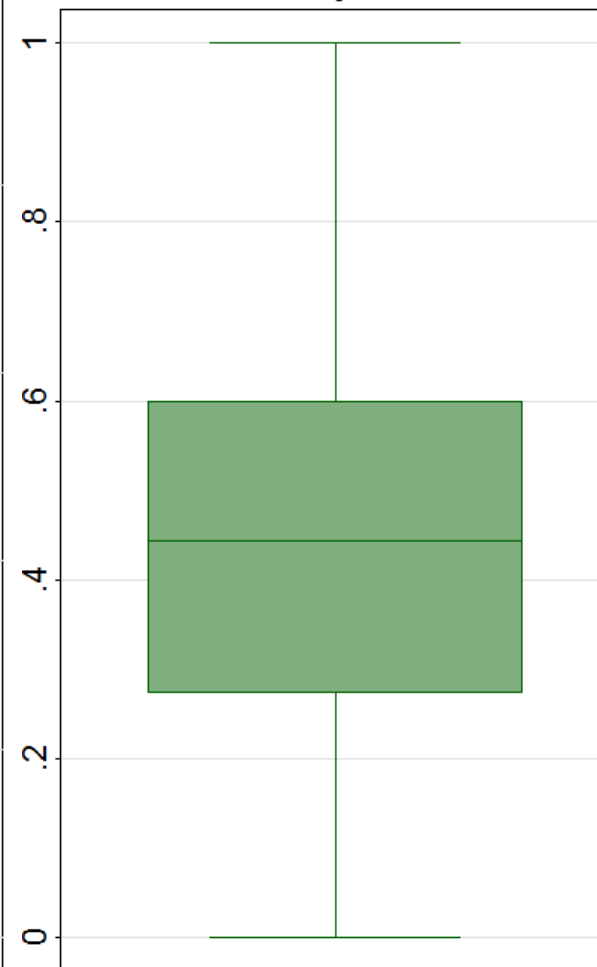
G1 great grandchildren



G1 great grandchildren with tertiary education

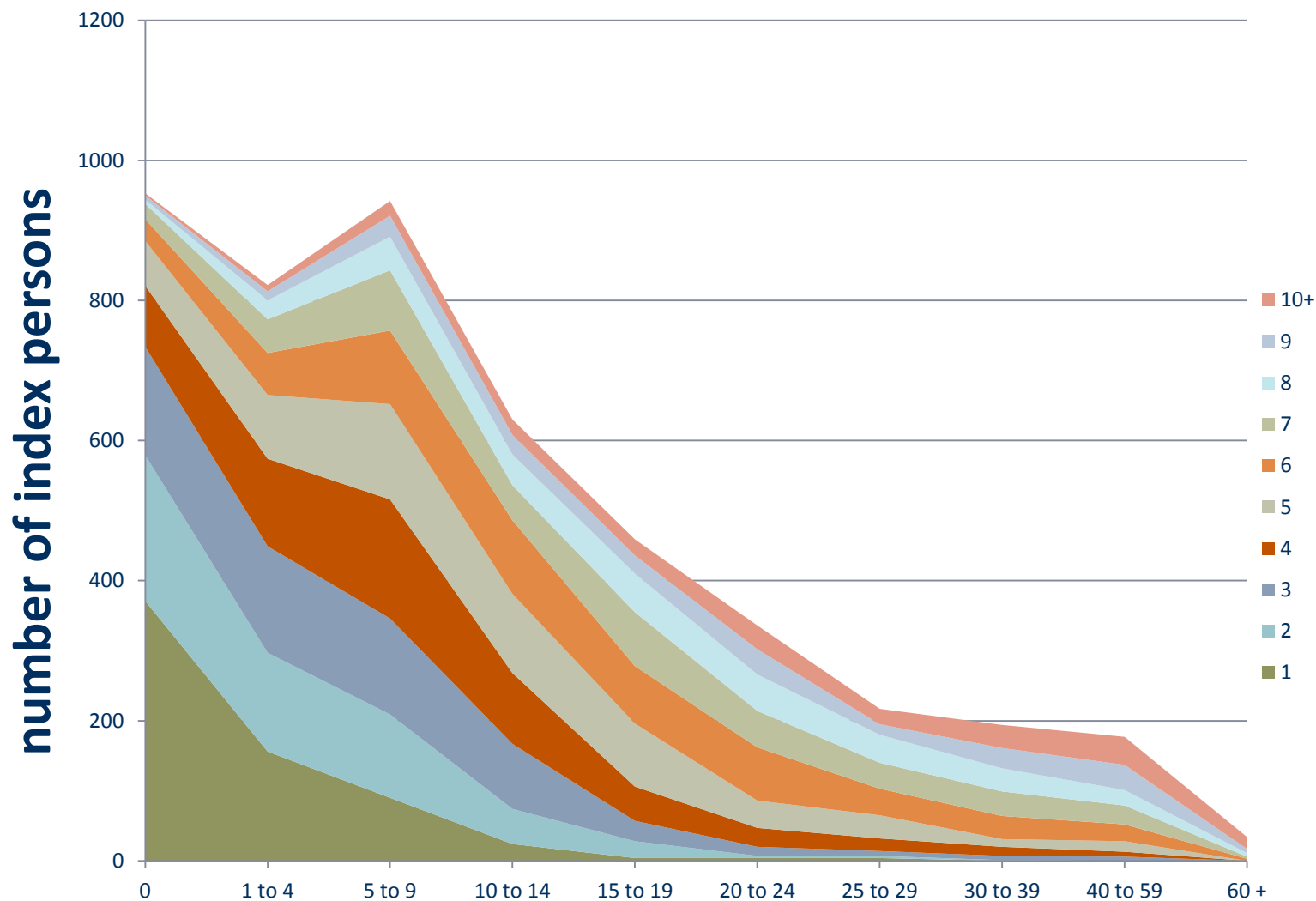


G1 share of great grandchildren with tertiary education



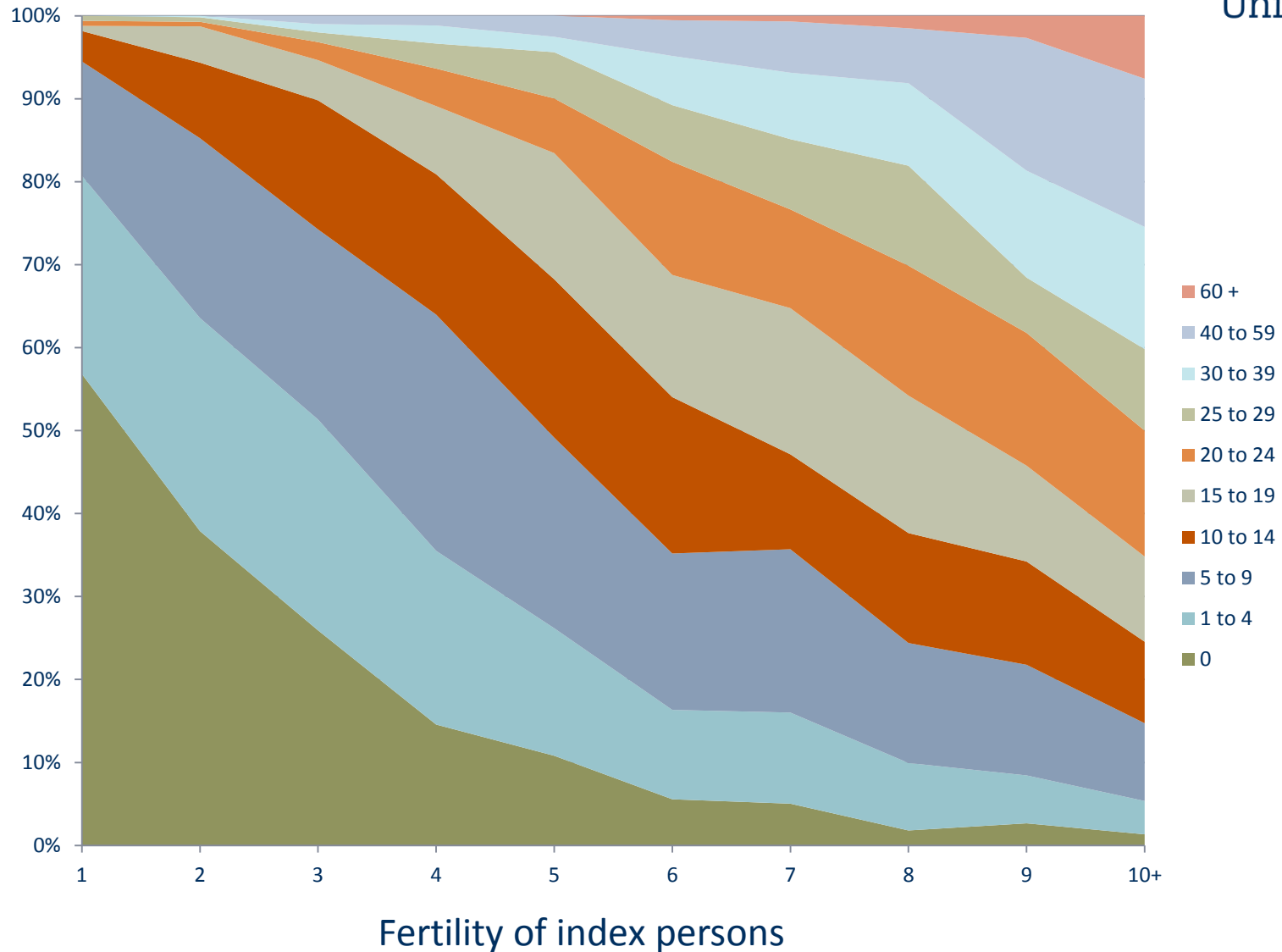


# Number of great grandchildren





# Number of great grandchildren



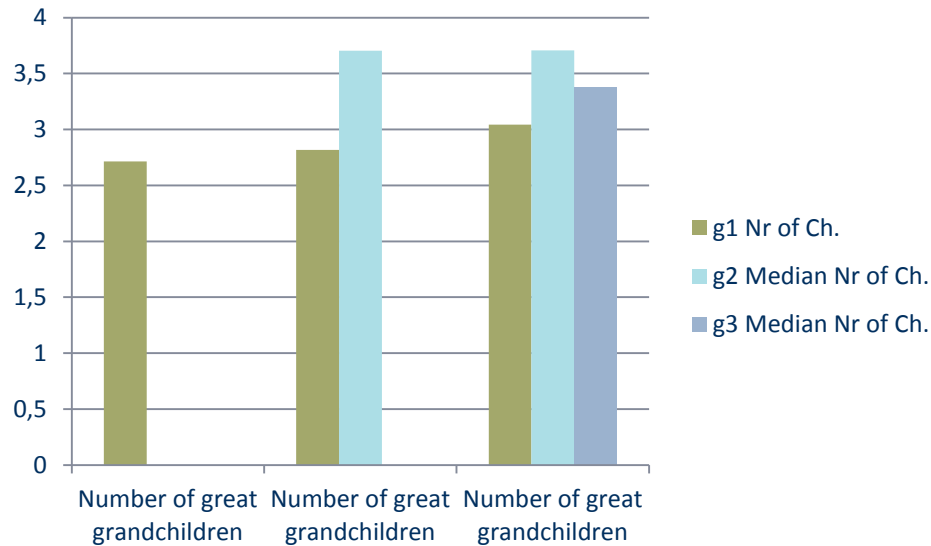


# Fertility effects on outcomes

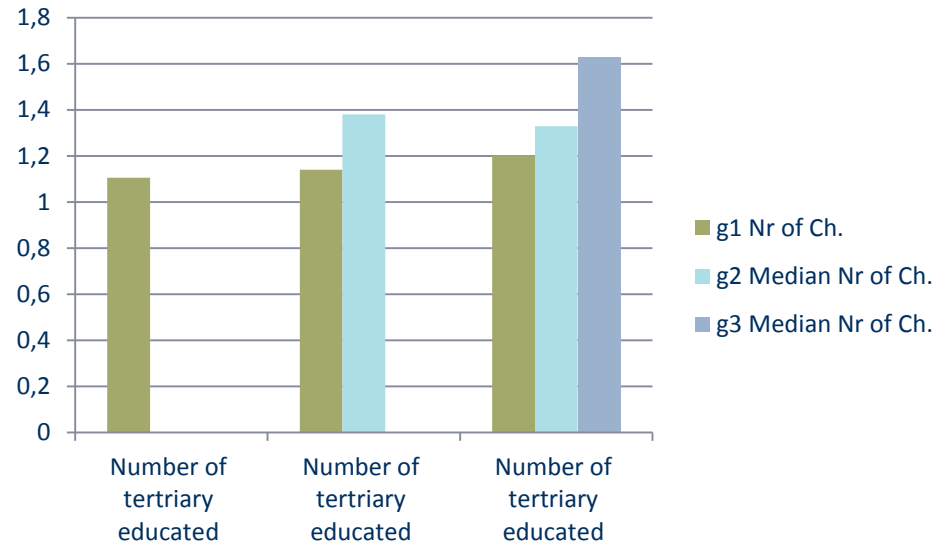


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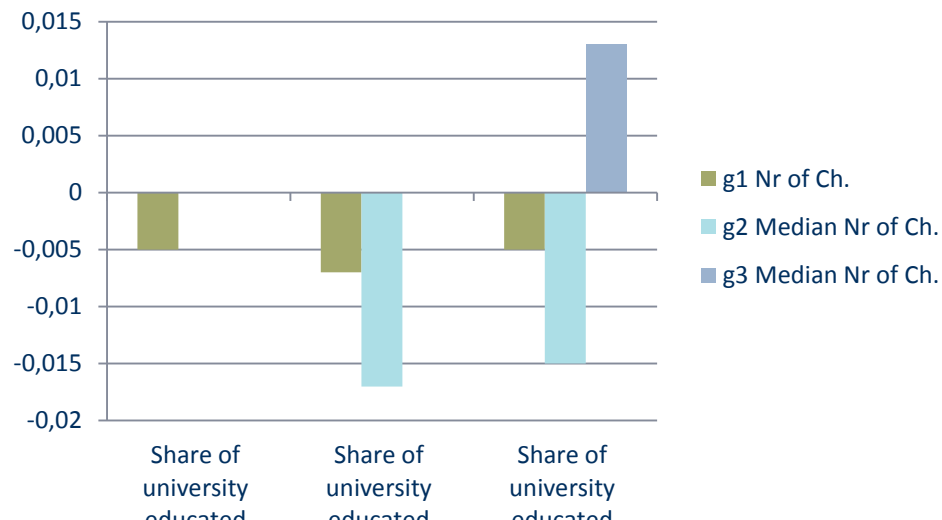
Model 1    Model 2    Model 3



Model 1    Model 2    Model 3



Model 1    Model 2    Model 3





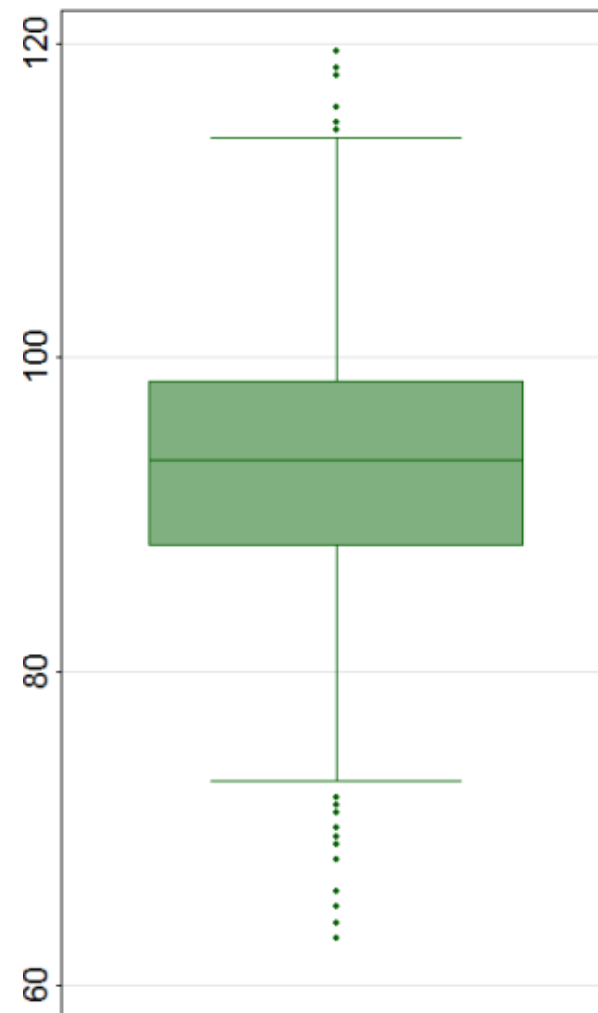
# Timing of fertility effects on outcomes



median years between g1 and g4



Median years  
between G1 and G4



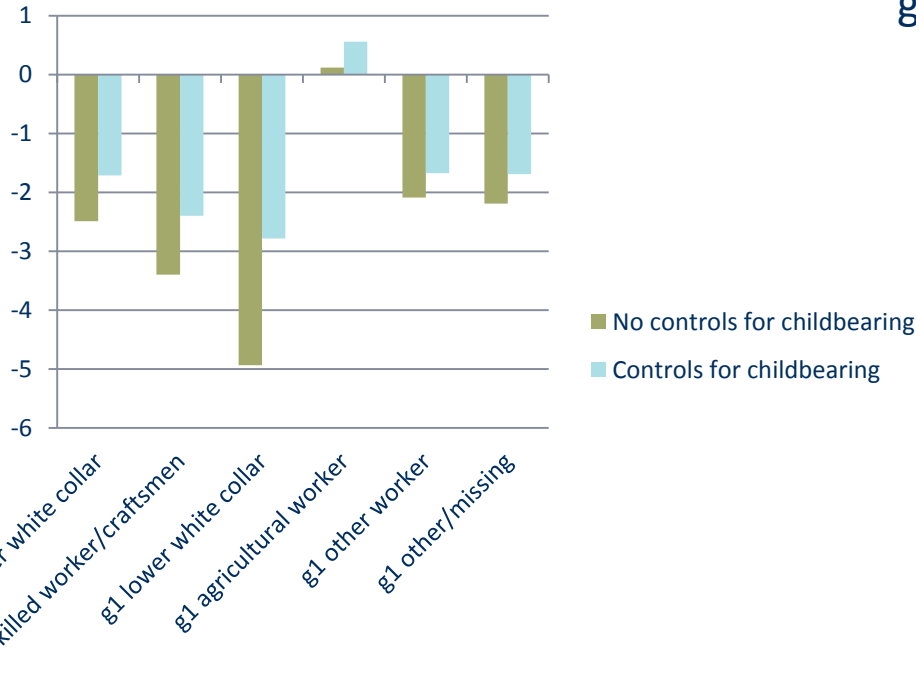


# Occupation in G1 effects on outcomes

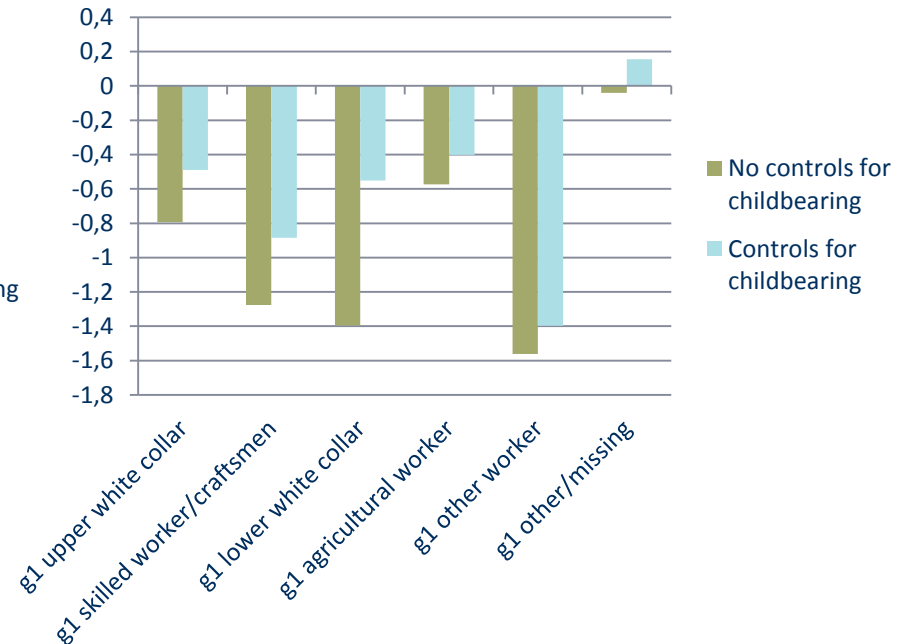


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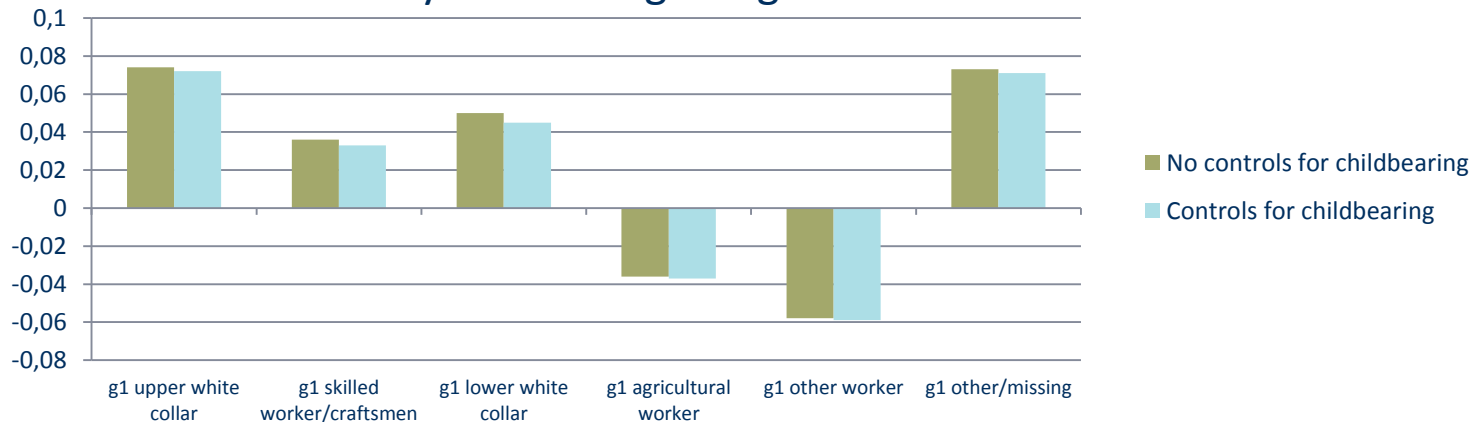
## Number of great grandchildren



## Number of tertiary educated great grandchildren



## Share of tertiary educated great grandchildren





# Summary

Fertility quantum (number of children) unsurprisingly highly associated with a large number of descendants

Strong effects of timing of fertility on both fertility and educational outcomes

Moderate effects of G1 occupation on both fertility and educational outcomes





# Conclusions



# Summary

Temporal context very important for both socioeconomic outcomes and fertility outcomes.

For example, big variance in fertility over time (some of this variance covaries with observable measures such as status, but most doesn't).

This means that as individuals are often more affected by their temporal context and peers, as compared to their parental background.



# Summary

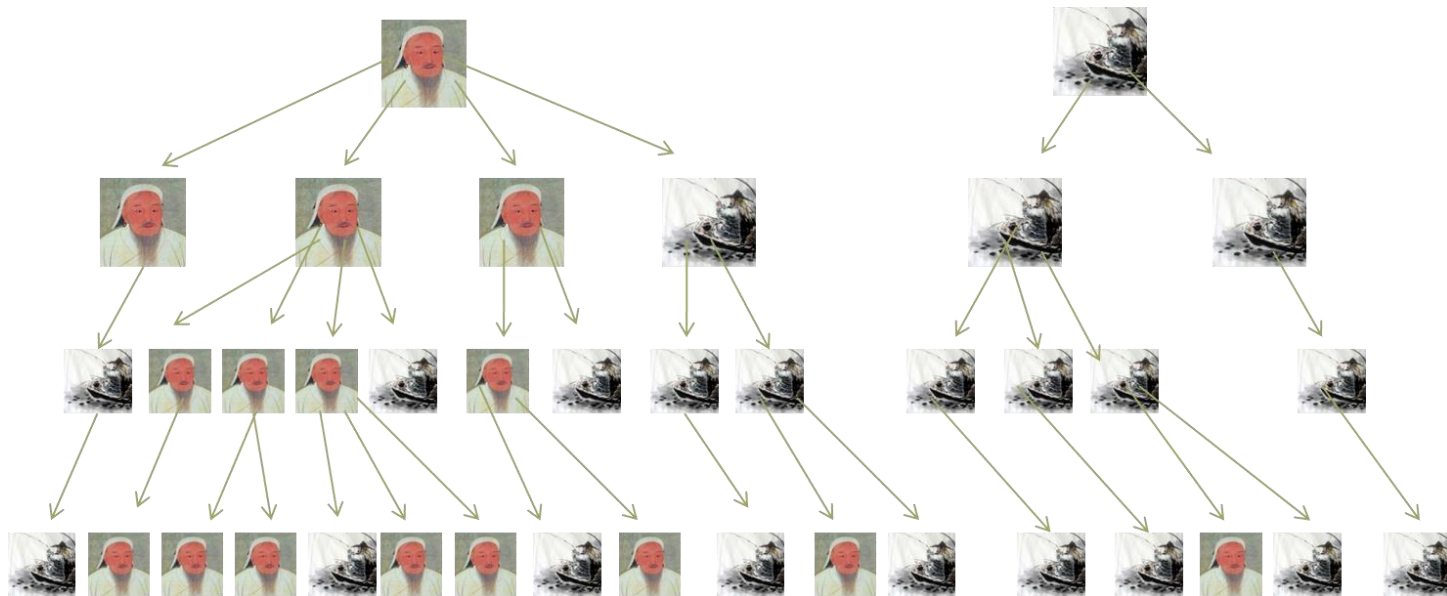
This implies that researchers working with multigenerational research have to pay great attention to temporal context.

Demographic variance is the most important determinant of socioeconomic and demographic outcomes among descendants of people born in 19<sup>th</sup> Northern Sweden.

Some of this variance is associated with group differences in reproductive and socioeconomic behaviors, but much of this is not.



# Thank you for your time



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