Inequality and Surnames

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Simple Measure of Social Mobility

- Correlation between parents and children on any measure of social status
  - 0 implies complete mobility
  - 1 implies complete rigidity
Social Mobility and Inequality closely linked

- For a given set of shocks to income or wealth each generation (e), long run distribution of outcomes depends on intergenerational correlation b

\[
Variance(y) = \frac{\text{variance}(e)}{1-b^2}
\]
Conventional Picture of Social Mobility
Implications, conventional estimates

- **Mobility Rates High**

  Share of social status variation inherited low – 4% Scandinavia, 22% USA
There is a social mobility problem.

Mobility rates too low in some societies. Enormous human potential squandered.

Social Democratic Nordic countries are achieving faster social mobility than free market USA.
Implications, conventional estimates

- What matters to social success?
  - Culture
  - Education
  - Social networks

- Not genetic inheritance of abilities
Limitations

- Looks just at one generation
- Looks just at individual aspects of status
Surname Method

- Measure social mobility by tracing status by surname lineages – e.g. Clark, Smith, Bazalgette

- Surnames link us to previous generations through the patriline – in England we can link some people to their ancestors of 1066 – 32 generations

- E.g. Norman surnames Montgomery, Baskerville, Punchard
Surname Method

- Based on current mobility measures common surnames should rapidly lose status information

- The rate at which they lose that information – the rate of social entropy - can be translated into the intergenerational correlation of status

- Surnames track one line of descent, but that line assumed representative (assortative mating)
Surprising and universal finding

- Surnames move to average status very slowly – 10-15 generations

- Implied intergenerational correlation of status 0.7-0.8
Table 2: Rare Oxbridge versus non-Oxbridge Surnames, 1800-29

<table>
<thead>
<tr>
<th>Oxbridge</th>
<th>Non-Oxbridge</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agassiz</td>
<td>Brickdale</td>
</tr>
<tr>
<td>Anquetil</td>
<td>Brooshooff</td>
</tr>
<tr>
<td>Atthill</td>
<td>Bunduck</td>
</tr>
<tr>
<td>Baitson</td>
<td>Buttanshaw</td>
</tr>
<tr>
<td>Barnardiston</td>
<td>Cantis</td>
</tr>
<tr>
<td>Bazalgette</td>
<td>Casamajor</td>
</tr>
<tr>
<td>Belfour</td>
<td>Chabot</td>
</tr>
<tr>
<td>Beridge</td>
<td>Charretie</td>
</tr>
<tr>
<td>Bleeck</td>
<td>Cheslyn</td>
</tr>
<tr>
<td>Boinville</td>
<td>Clarina</td>
</tr>
<tr>
<td>Boscawen</td>
<td>Coham</td>
</tr>
<tr>
<td>Bramston</td>
<td>Conyngham</td>
</tr>
</tbody>
</table>
## Family vs Surname Wealth Correlation, England

<table>
<thead>
<tr>
<th>Period of Death</th>
<th>Individual Wealth Correlation</th>
<th>Surname Wealth Correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1888-1917</td>
<td>0.48</td>
<td>0.71</td>
</tr>
<tr>
<td>1918-59</td>
<td>0.41</td>
<td>0.69</td>
</tr>
<tr>
<td>1960-87</td>
<td>0.41</td>
<td>0.73</td>
</tr>
<tr>
<td>1999-2012</td>
<td>0.46</td>
<td>0.83</td>
</tr>
</tbody>
</table>
Patriline – what about daughters?
Assortative Mating Pre-1880 (richer lineages) – Wealth, England
Example of surprising persistence of status – Darwin great-great-grandchildren

- 10 children, but only 27 great-great-grandchildren
- 11 notable enough to have Wikipedia pages/Times Obits
- 6 university professors, 4 authors, a painter, 3 medical doctors, a well-known conservationist, and a film director
Countries

- England, 1300-2012
- Sweden, 1700-2012
- USA, 1920-2012
- Chile, 1950-2012
- India, 1860-2012
- Japan, 1860-2012
- China, 1650-2012
- Taiwan, 1949-2012
- Costa Rica, 1950-2014
- Australia, 1870-2014
- Hungary, 1860-2017
- Russia, 1879-2017
- Barcelona, 1500-1860
Intergenerational correlation measured through surnames

- High 0.7-0.8
- Little variation across societies and epochs

Intergenerational Correlation

- Sweden
- Japan
- UK
- USA
- Chile
- India
- China
Sweden as another example

- Elite surnames from 1600-1800
- Counts/Barons
- Untitled Nobility
- Latinized Surnames
Conventional Picture of Social Mobility

The graph shows a scatter plot with the Gini Coefficient of Income on the x-axis and Earnings Correlation - b on the y-axis. Countries such as Peru, Brazil, Chile, Argentina, UK, USA, China, Sweden, Norway, Finland, NZ, and Canada are plotted on the graph. The data points indicate a positive correlation between income inequality and earnings correlation, suggesting that countries with higher income inequality tend to have higher earnings correlation.
Riddarhuset, Stockholm
Figure 3: The History of Ennoblement in Sweden

Source: Almenberg and Dreber, 2009, 178.
Aristocratic Surnames

- Domestic - embodying status elements such as *Gyllen* (gold), *Silfver* (silver), *Adler* (eagle), *Leijon* (lion), and *Ehren* (honor)

- Leijonhufvud
- Gyllenstierna
- Oxenstierna
- Ehrengärd
Latinized Surnames

- Celsius
- Aquilonius
- Arrhenius
- Boethius
- Bruzelius
- Cnattingius
Representation of Surname Types Among Doctors, 1890-2011

Relative Representation

- Titled Nobles
- Other Nobles
- Latinized
- Correlation 0.72

Year:
- 1900
- 1920
- 1940
- 1960
- 1980
- 2000
Elite Surnames in the Swedish Royal Academies

Relative Representation vs. Cohort

- Elite
- Correlation 0.87
- Son
- Correlation 0.87

Correlation value: 0.87
## Summary Surname b Estimates by Period, Sweden

<table>
<thead>
<tr>
<th>Group</th>
<th>1700-1900</th>
<th>1890-1979</th>
<th>1950-2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attorneys</td>
<td>-</td>
<td>-</td>
<td>0.71</td>
</tr>
<tr>
<td>Physicians</td>
<td>-</td>
<td>0.67</td>
<td>0.88</td>
</tr>
<tr>
<td>University Students</td>
<td>0.78</td>
<td>0.85</td>
<td>0.66</td>
</tr>
<tr>
<td>Academicians</td>
<td>0.89</td>
<td>0.75</td>
<td>0.84</td>
</tr>
</tbody>
</table>
Hungary, 1946-2017

\[ \rho = 0.86 \]
Why are the conventional and surname results so different?

- Conventional estimates focus on individual aspects of status
- Surnames are capturing what happens to underlying overall status
Social Status Across Multiple Generations
Status
Phenotype 0

Status
Genotype 0

Status
Phenotype 1

Status
Genotype 1
For each individual:

- **Status phenotype** – measured status on variety of aspects

- Underlying **status genotype** – status that is transmitted to next generation – can be inferred from the status of your lineage
Surname Estimates

- Long run social mobility

- Social mobility of social groups – ethnic, racial, religious, immigrants
More Fundamental Question – what transmits social genotype?

- Family Resources?
- Family Culture?
- Social Networks?
- Genes?
Surprising Evidence – most social status transmission is genetic

- Patterns of inheritance
- Adoption studies
- Groups that marry endogamously
- How elites get formed
- Shocks to family size in England 1800-1880
Conclusions

- There is equality of opportunity in most societies.
- Most social ability biologically inherited – and gets rewarded.
- This is not a pessimistic result.
- But it is an argument for limiting inequalities.
The Son Also Rises. Surnames and the History of Social Mobility