## 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) =  $\frac{variance(e)}{1-b^2}$ 

#### **Conventional Picture of Social Mobility**



Implications, conventional estimates

**O**Mobility Rates High

Share of social status variation inherited low -4% Scandinavia, 22% USA

Implications, conventional estimates

## •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?

CultureEducationSocial 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 loose 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

| Oxbridge     |            | Non-Oxbridge |              |
|--------------|------------|--------------|--------------|
|              |            |              |              |
| Agassiz      | Brickdale  | Agnerv       | Bodgett      |
| Anquetil     | Brooshooft | Allbert      | Boolman      |
| Atthill      | Bunduck    | Arfman       | Bradsey      |
| Baitson      | Buttanshaw | Bainchley    | Breckill     |
| Barnardiston | Cantis     | Bante        | Callaly      |
| Bazalgette   | Casamajor  | Barthorn     | Capildi      |
| Belfour      | Chabot     | Bavey        | Carville     |
| Beridge      | Charretie  | Bedborne     | Cavet        |
| Bleeck       | Cheslyn    | Bemond       | Chanterfield |
| Boinville    | Clarina    | Berrton      | Chesslow     |
| Boscawen     | Coham      | Bideford     | Chubham      |
| Bramston     | Conyngham  | Bisace       | Clemishaw    |

### Relative Oxbridge Attendance for Elite Rare Surnames 1800-29



## Family vs Surname Wealth Correlation, England

| Period of Death | Individual Wealth | Surname Wealth |  |
|-----------------|-------------------|----------------|--|
|                 | Correlation       | Correlation    |  |
|                 |                   |                |  |
|                 |                   |                |  |
| 1888-1917       | 0.48              | 0.71           |  |
| 1918-59         | 0.41              | 0.69           |  |
| 1960-87         | 0.41              | 0.73           |  |
| 1999-2012       | 0.46              | 0.83           |  |

### 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 greatgreat-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, 1300-2012Sweden, 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

## Conventional versus Surname Estimates of Status Persistence, 1950-2012



## Sweden as another example

• Elite surnames from 1600-1800

• Counts/Barons

• Untitled Nobility

• Latinized Surnames

#### **Conventional Picture of Social Mobility**



### Riddarhuset, Stockholm







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
- Ehrensvärd

## Latinized Surnames

- Celsius
- Aquilonius
- Arrhenius
- Boethius
- Bruzelius
- Cnattingius

#### Representation of Surname Types Among Doctors, 1890-2011



## Elite Surnames in the Swedish Royal Academies



## Summary Surname b Estimates by Period, Sweden

| Group               | 1700-1900 | 1890-1979 | 1950-2012 |
|---------------------|-----------|-----------|-----------|
|                     |           |           |           |
|                     |           |           |           |
| Attorneys           | -         | -         | 0.71      |
| Physicians          | -         | 0.67      | 0.88      |
| University Students | 0.78      | 0.85      | 0.66      |
| Academicians        | 0.89      | 0.75      | 0.84      |

## Hungary, 1946-2017



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





#### 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

Social status USA 2012 – Doctors per 1000



#### 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

