

# Measuring social mobility rates in earlier and less well documented societies

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# Typical measures of social mobility rates demand a lot of information

- Reliable links between parents and children
- Comparable measures of income, occupational status, educational status
- For England the earliest conventional social mobility estimates are for 1851 and later.
- For India no conventional estimates before 1950.

# Surnames

- Using surname status instead of individual status we can estimate social mobility rates in even poorly documented societies.
- Examples, England 1200-2019, India 1860-2019

# Surnames

- At initial formation, surnames in many societies show substantial differences in status
- England – names of places (*Berkeley, Windsor*, etc) high status in 1086 and 1300
- India – Brahmin surnames – *Mukherjee, Banerjee, Chatterjee, Ganguly, Bhattacharjee, and Chakrabarti*
- Lower caste surnames - *Shaw/Show, Rauth/Routh, Paswan, Dhanuk, Balmiki*, and *Mahata/Mahato* - also Muslim surnames

# Another Source of High and Low Status Surnames – selective migrations, or selective religious conversions

- England – Huguenots 1685 – Pigou, Courtauld, Fourdrinier
- Egypt – Coptic surnames
- USA/Europe – Jewish surnames

# Rare Surnames

- By random chance some will be high status some low
- Since names are rare most people attach no significance to them

## Rare Surnames England – which are very high status, which very low?

Ahmuty

Agace

Adson

Angerstein

Agar-Ellis

Aller

Appold

Aglen

Almand

Auriol

Allecock

Angler

Bailward

Aloof

Anglim

Basevi

Alsager

Annings

Bazalgette

Bagnold

Austell

Beague

Beridge

Backlake

Benthall

Berthon

Bagwill

Berens

Brettingham

Balsden

Berners

Brideoake

Banbrook

Bigge

Broadmead

Bantham

# How persistent are these differences across generations?

- Conventional estimates – intergenerational correlation of social status only 0.3-0.5
- Markov assumption - across 3-4 generations descendants of initial elites and underclasses have average status. Correlation over 4 generations 0.03-0.13.
- Elite and underclass surnames would have average status within 100 years.



# Table 1: Conventional Intergenerational Mobility Estimates, England, births 1840-1929

Note: Standard Errors in Parentheses.

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| <b>Birth Period<br/>of Sons</b> | <b>Ln Wealth at<br/>Death</b> | <b>Higher<br/>Education</b> | <b>Occupational<br/>Rank</b> |
|---------------------------------|-------------------------------|-----------------------------|------------------------------|
| 1840-69                         | 0.403<br>(.020)               | 0.458<br>(.015)             | 0.529<br>(.015)              |
| 1870-99                         | 0.311<br>(.018)               | 0.353<br>(.014)             | 0.446<br>(.013)              |
| 1900-29                         | 0.247<br>(.022)               | 0.246<br>(.020)             | 0.415<br>(.019)              |
| All                             | 0.352<br>(.012)               | 0.358<br>(.009)             | 0.465<br>(.009)              |

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**Table 2: Difference in Status between Elite and Average Surnames, men**

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| <b>Birth Period</b> | <b>Ln Wealth at Death</b> | <b>Higher Education</b> | <b>Occupational Rank</b> |
|---------------------|---------------------------|-------------------------|--------------------------|
| 1810-39             | 3.628<br>(.102)           | 0.328<br>(.011)         | 0.318<br>(.007)          |
| 1840-69             | 2.625<br>(.079)           | 0.250<br>(.008)         | 0.264<br>(.005)          |
| 1870-99             | 1.604<br>(.064)           | 0.166<br>(.007)         | 0.179<br>(.005)          |
| 1900-29             | 1.125<br>(.069)           | 0.146<br>(.009)         | 0.147<br>(.006)          |

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**Table 3: Intergenerational Correlations of Status Revealed by Surnames - England**

| <b>Birth Period of Sons</b> | <b>Ln Wealth at Death</b> | <b>Higher Education</b> | <b>Occupational Rank</b> |
|-----------------------------|---------------------------|-------------------------|--------------------------|
| 1840-69                     | 0.724<br>(.038)           | 0.762<br>(.037)         | 0.831<br>(.025)          |
| 1870-99                     | 0.611<br>(.038)           | 0.664<br>(.044)         | 0.677<br>(.027)          |
| 1900-29                     | 0.701<br>(.053)           | 0.877<br>(.061)         | 0.819<br>(.036)          |
| All                         | 0.677<br>(.021)           | 0.763<br>(.032)         | 0.772<br>(.021)          |

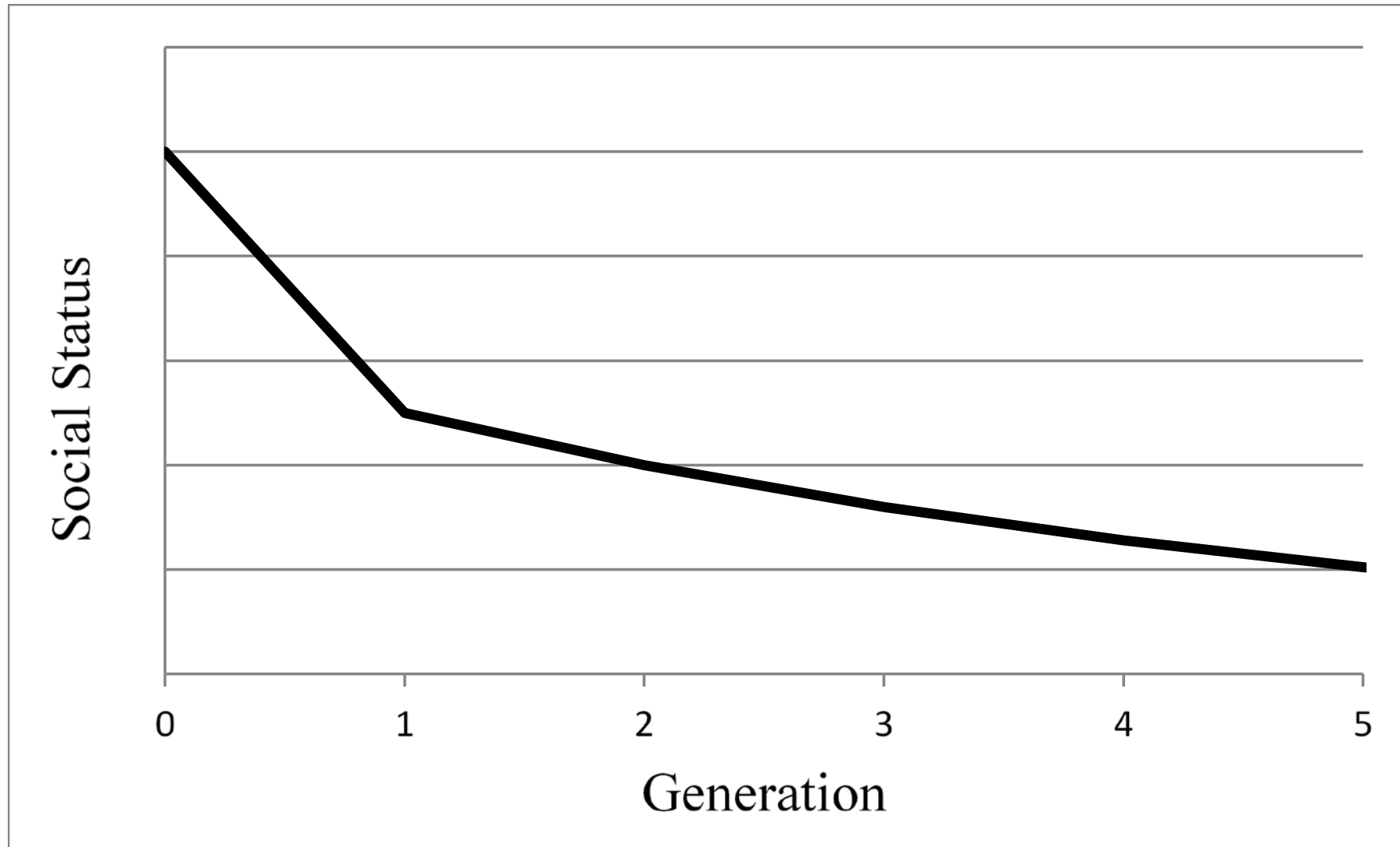
# How do we reconcile these estimates?

- $y_t = x_t + u_t$

- $x_t = bx_{t-1} + e_t$

- $x_t$  underlying transmittable status,  $y_t$  observed status,  $b = 0.7-0.8$

**Figure 2: Paths of Regression to the Mean for an individual family**

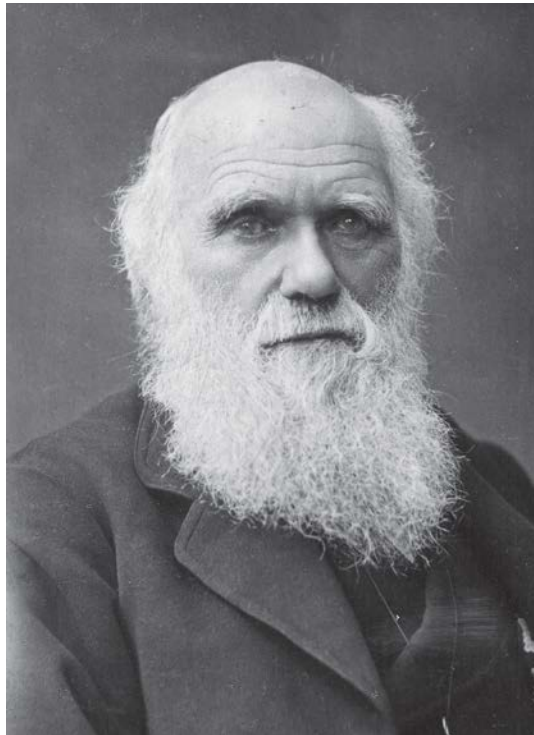


# Averaging Across Surnames

$$\bar{y}_t = \bar{x}_t$$

$$\bar{y}_{t+1} = b\bar{y}_t$$

## 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

# When are such estimates useful?

How long will it take for the people currently in the bottom 10% of the status distribution to attain average status – 300 years.



# Surname estimates can be made with minimal information

- Share of surname type in population
- Share of surname type in target elite or underclass.
- % target elite or underclass represents in population

# b estimated from population shares

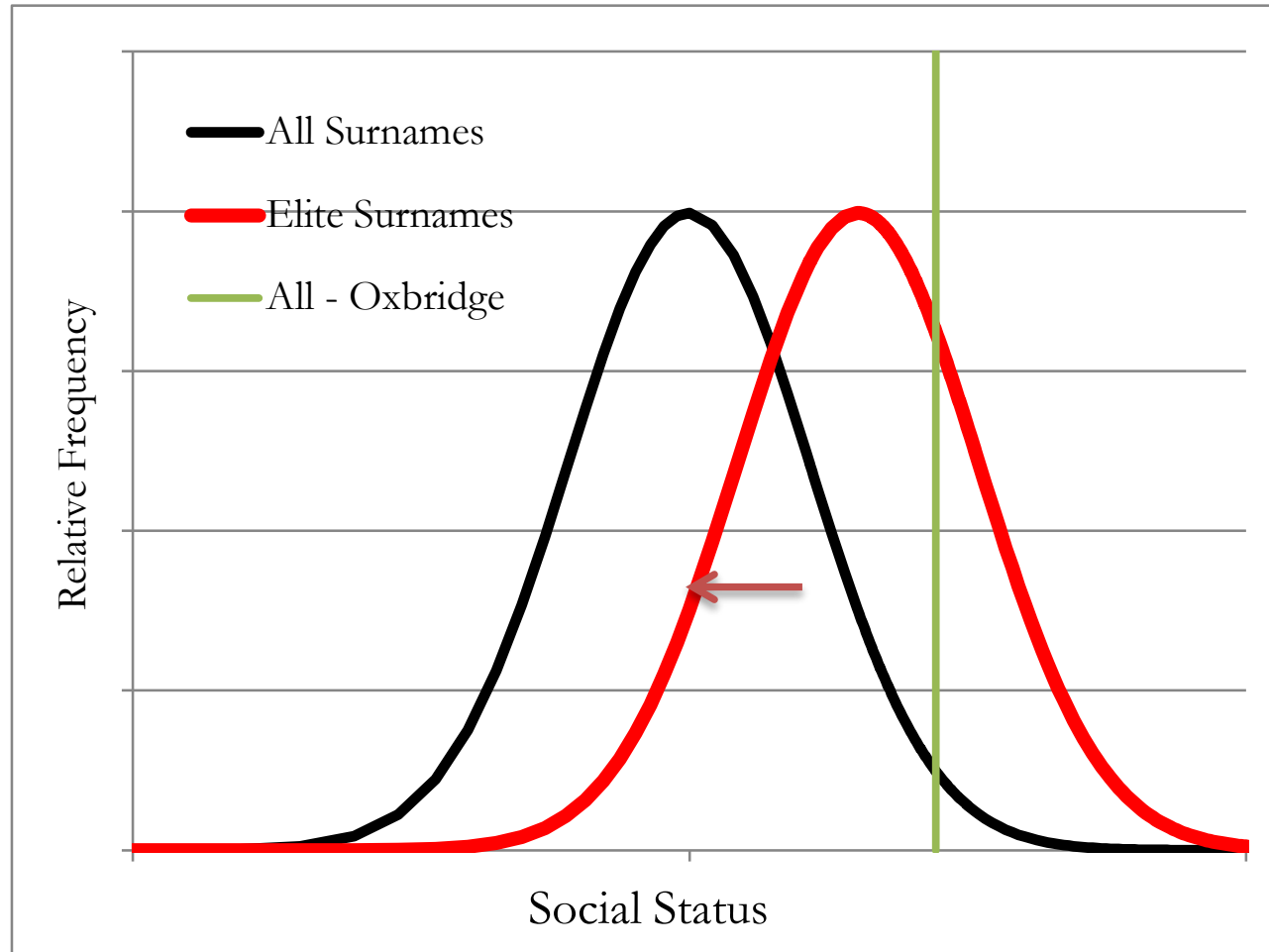


Figure 4: Mean Status, Rare Elite Surnames, Oxbridge, 1830-2013

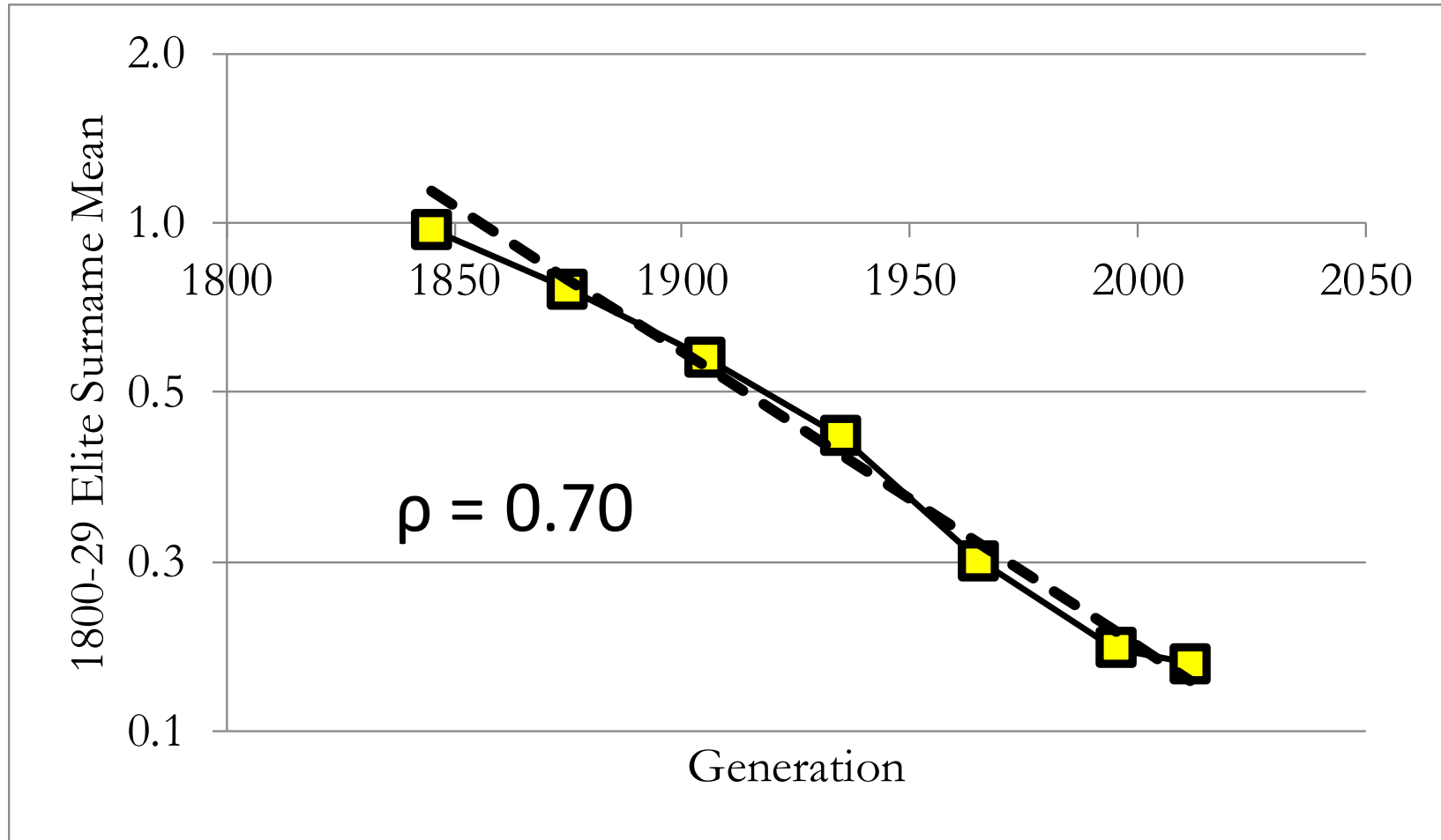
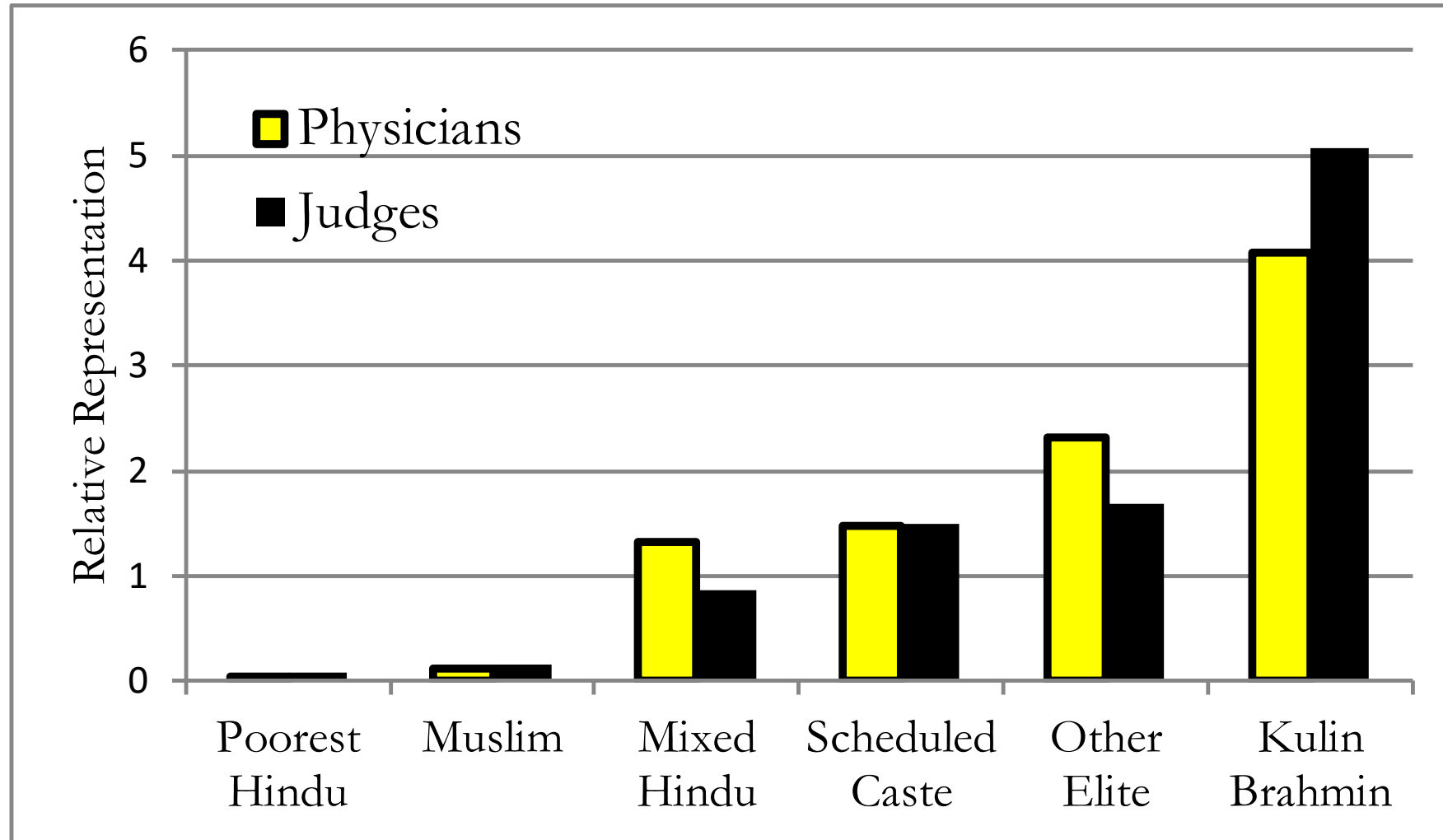


Figure 8: Representation of Different Surname Types in West Bengal Elites, 2010-13



# Data

- Surname population shares from Calcutta Electoral Register 2010
- Surname shares projected back using censuses
- Doctor surname shares from Medical Registers 1860-2013

**Table 10: Relative Representation of Surname Types among Doctors in Bengal, 1860-2011**

| Period    | Muslim | Brahmin<br>Other<br>Elite | Poor<br>Hindu | Scheduled<br>Caste | Mixed<br>Hindu |      |
|-----------|--------|---------------------------|---------------|--------------------|----------------|------|
| 1860-1889 | 0.04   | 4.19                      | 3.39          | 0.02               | 0.57           | 1.49 |
| 1890-1919 | 0.05   | 4.73                      | 2.92          | 0.03               | 0.73           | 1.42 |
| 1920-1946 | 0.13   | 4.30                      | 2.60          | 0.01               | 0.72           | 1.45 |
| 1947-1979 | 0.15   | 4.27                      | 2.71          | 0.04               | 1.01           | 1.40 |
| 1980-2011 | 0.10   | 4.05                      | 2.15          | 0.06               | 2.26           | 1.51 |

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# What characterizes societies with low observed rates of mobility from surnames?

- High rates of marital endogamy.

$$y_t = x_t + u_t$$