Was There Ever a Ruling Class? A Proposal for the study of 800 Years of Social Mobility

¿Hubo alguna vez una clase dominante? Una propuesta para el estudio de 800 años de movilidad social

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ABSTRACT

This paper reports on a preliminary investigation of surnames distributions as a measure long run social mobility. In England this suggests two surprising claims. First, England, all the way from the heart of the Middle Ages in 1250 to at least 1860, was a society without persistent social classes. It was a world of social mobility, with no permanent over-class and under-class, a world of complete equal opportunity. There was, however, a gain from being in the upper class in any generation in the form of leaving more copies of your DNA permanently in later populations. Second, signs of persistent social classes have only emerged in societies like England and the United States in recent years. Instead of moving from a world of immobility and class rigidity to a world of equal opportunity, we have moved in the opposite direction.

RESUMEN

Este artículo presenta los primeros resultados de una investigación sobre la distribución de apellidos como medida de la movilidad social a largo plazo. En Inglaterra esto sugiere dos sorprendentes afirmaciones. En primer lugar, que desde 1250 hasta al menos 1860 no hubo una sociedad con clases sociales constantes. Se trataba de un mundo de amplia movilidad social, sin clase alta ni baja permanente: un mundo en definitiva de completa igualdad de oportunidades. Sin embargo, la ventaja de pertenecer a la clase más alta en cualquier generación derivaba de la posibilidad delegar más copias del ADN de uno mismo a poblaciones venideras. En segundo lugar, los signos que muestran la existencia de clases sociales constantes en sociedades como la inglesa o la norteamericana solamente han aparecido en los últimos años. En lugar de pasar de una sociedad inmóvil y de clases rígidas hacia un mundo de igualdad de oportunidades, nos hemos movido en la dirección contraria.

KEY WORDS: Intergenerational Mobility, Inequality

JEL Codes: N33, N34, N62

PALABRAS CLAVE: Movilidad Intergeneracional, Desigualdad

Código JEL: N33, N34, N62

1. Introduction

In 1886 Francis Galton – the famous anthropologist, eugenicist, geographer, inventor, meteorologist, polymath, statistician, tropical explorer, and second cousin of Darwin – published a fabulous discovery which he labeled "regression towards mediocrity"[1]. Galton's paper showed the tendency of both tall and short parents to have children whose heights tended towards the mean of the society. This might seem small potatoes, but Galton had uncovered a general process – regression to the mean - with potentially profound social implications, since it applies to all personal characteristics including education, IQ, income and wealth. It is a process that has led free-market economists such as Gary Becker to proclaim:

> "Almost all earnings advantages and disadvantages of ancestors are wiped out in three generations. Poverty would not seem to be a "culture" that persists for several generations"[2].

If Becker is correct Galton's discovering shows that there cannot now be social classes – meaning persistent groups of privileged and poor – in meritocratic societies such as England and the USA where regression to the mean is strong. Within a few generations, a very few generations, there must be a complete churning of the society: the descendants of the poorest and the richest will be equally represented. Whatever its appearance in the small, we live in a profoundly egalitarian society once we move to the scale of generations. Class is the illusion of the moment[3].

Yet even now we live in a world where the average person has a strong belief in the reality and persistence of class. We all know there is some social mobility. But we assume still that the children at Choate, Hotchkiss and Groton, or at Eton, Harrow and Rugby, are mainly drawn from some timeless elite. When we see pictures of inner city deprivation we do not think these are the ultimate offspring of middle class households like our own. Rather we assume them the latest generation of a permanent and persistent underclass, which thankfully our own descendants will never inhabit.

English historians, similarly, while debating the degree to which the pre-industrial English upper classes were an "open" elite, still assume that:

> "The English elite of the seventeenth and eighteenth centuries was full of old families... Great families, often growing more prosperous and prestigious over time but important even in the fourteenth and fifteenth centuries and frequently retaining their original patrimony... Many of their names are familiar to any student of English history: Berkeley, Cavendish, Courtenay, Herbert, Howard, Lowther, Manners, Pelham, Stanley, and Talbot"[4].

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[1]   Galton (1886). Galton had announced initial observation on regression to the mean with sweet pea sizes in 1877, but in the 1886 paper he announced the finding as a general law applying to all hereditary traits.

[2]   Becker and Tomes (1986), S32. Gary Solon and others have since established that regression to the mean is less strong than Becker and Tomes believed. But that just means the quote would need to be amended to *"wiped out in five generations"*. See Solon (1999), Bowles and Gintis (2002).

[3]   The dystopic vision of Herrnstein and Murray (1996), of a modern society divided into classes based on genetically transmitted IQ has also been criticized as incompatible with the strong observed regression to the mean of all human traits.

[4]   Wasson (1998), p. 35.

Elite society was not closed to new entrants, but it had long persisting members.

Social mobility is, of course, a matter of keen interest to all upper class parents in any society. While we celebrate mobility in the abstract, we struggle ferociously in the concrete to frustrate it. At the personal level we desperately hope that there is a ruling class, and that our children and grandchildren can remain within its warm embrace. We do not see the future of our offspring as an eventual decline back to mediocrity.

The central question this paper addresses is whether this is a grand illusion? Was there ever – even in the dark heart of medieval England - a ruling class? A ruling class, that is, in the sense of a persistent, upper class, strata within the society? Was there, in conjunction, even in the era of lord and serf, ever a persistent underclass? Can most members of the group with the top ten percent of incomes now trace their origins to the ruling class of medieval England? Can most members of the bottom ten percent of the income distribution trace their origins to the landless laborers of the medieval manor? Similarly was there ever a criminal underclass?

What we will learn are two astonishing things. First, pre –modern England, all the way from 1250 to at least 1860, was a society without persistent social classes. It was a world of complete social mobility, with no permanent over-class and under-class. It was, despite all appearances, a world of complete equal opportunity. George Orwell could not be more incorrect when he observed "England is the most class-ridden country under the sun. It is a land of snobbery and privilege"[5].

Second, persistent social classes have only emerged in societies like England and the United States in recent years. We congratulate ourselves that we have created a meritocracy with access for all compared to the bad old days. Yet instead of moving from a world of immobility and class rigidity to a world of complete mobility we have moved in the opposite direction. The US, for example, now exhibits persistent upper and under classes and there are indications that the same may be true for modern Britain. Why this has happened is, of course, of considerable interest and concern.

2. The Mathematics of Mobility

The evidence on social mobility in the long run is surprisingly limited. The reason for this is that most studies of social mobility have looked only at parents and children. Linking people through three or more generations is difficult, and has been done rarely[6].

These two-generation studies consistently do find Galton's "regression to the mean". The children of the rich are poorer than their parents, the children of the poor are richer than their parents. It applies to all characteristics that can be measured for parents and children.

Thus if we measure the logarithm of the income or wealth of the parents relative to the average by y_0, and that of the children by y_1 then we can estimate empirically the value of the coefficient b in the expression[7]:

$$Y_1 = By_0 + U_0$$

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[5]   George Orwell (1941).
[6]   Biblarz, Bengtson, and Bucur (1996), look explicitly at three generations, but consider only the nature of parent-child linkages across different generations.
[7]   Since we are measuring the logarithm of income relative to the average, the average value of y_0 will be 0.

If b is 1, then the best predictor of the children's income is that of their parents and there is no regression to the mean. In this case there would be persistent social classes. In practice modern estimates of b vary between 0.2 and 0.5, implying substantial regression to the mean[8]. A coefficient of 0.5 implies that if a parent has income double the national average then their children on average would have an income level only 50% above the national average. Figure 1 shows what regression to the mean looks like in practice, for the case where $b = 0.5$[9].

FIGURE 1

REGRESSION TO THE MEAN IN INCOME ILLUSTRATED
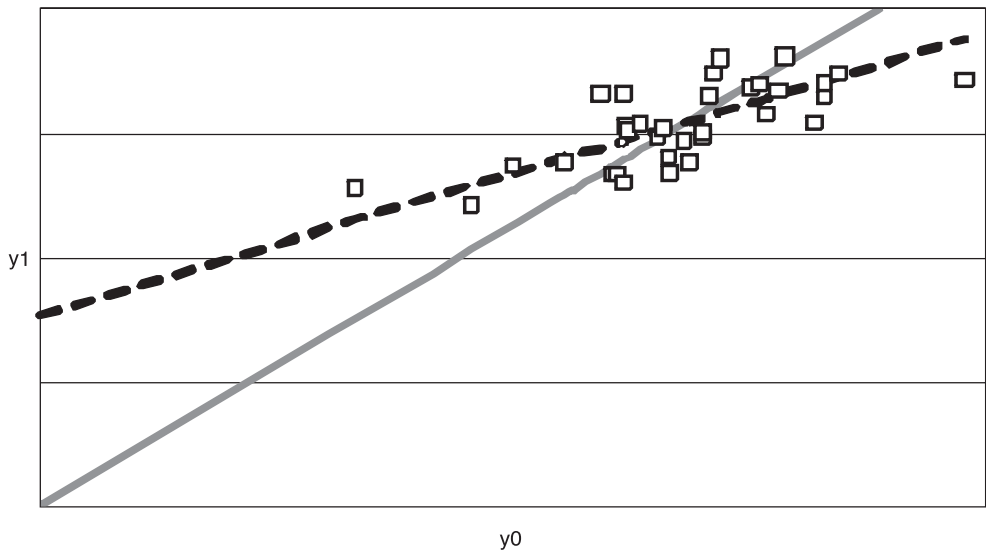
Observing the intergenerational regression of income, wealth and status to the mean, some free market advocates such as Gary Becker have argued that with enough time we are in a society of complete social mobility. The argument is by iteration. Assuming for the next generation that:

$$y_1 = by_0 + u_0, \ b < 1$$

$$\text{then } y_n = b^n y_0 + u_n^\star$$

as n becomes large,

$$b^n \approx 0, \text{ so } y_n \approx u_n^\star$$

were

$$u_n^\star = b^{n-1}u_0 + b^{n-2}u_1 + \dots + u_n$$

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[8]   Solon (1999).

[9]   With a stable distribution of wealth or income over time, b also indicates how much of the variation in income in societies is explicable from inheritance. The share so explained will be b^2. This means that with a b of 0.5, only about 0.25 of the variance of incomes in each generation is explained by inheritance.

The expected log income of descendants after a large number of generations, whatever the initial income y_0, is 0. The regression of expected income to the mean value for the society will occur very quickly if b has a commonly estimated value such as 0.5. If the parents, for example, have an income 500% of the social mean, then for grandchildren it will be 150%, and for great-grandchildren 122%. Figure 2 shows how rapid the process of regression to the mean will be between generations for values of b even as high as 0.6.

FIGURE 2
REGRESSION TO THE MEAN BY GENERATION
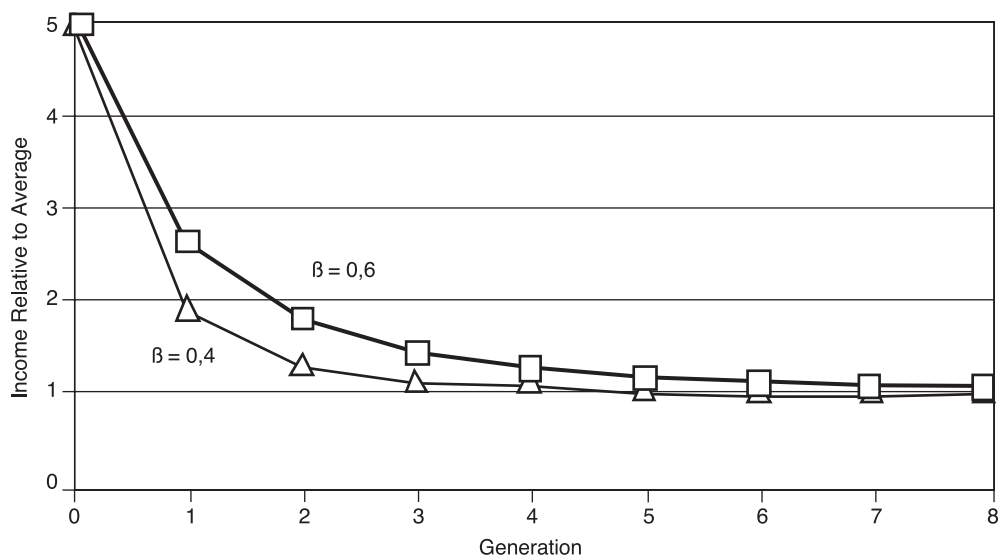
However, the one generational regression to the mean that is typically observed is compatible with a very different potential implication about long run social mobility. To see this assume that the initial income has two components, so that:

$$y_0 = z + e_0$$

z is the systematic component of the income, determined by such things as genetics and social class, and e_0 is the random component. Suppose that z gets faithfully transmitted between generations[10]. There are upper and lower classes. Then the income of the next generation will be:

$$y_1 = z + e_1$$

Where the average value of z, by construction, is 0. Suppose that society consists of a group of people of such different economic classes $z_1, z_2, \ldots z_n$. What would the global connec-

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[10]   This will only happen if there is perfect assortative mating, so that everyone marries someone with the same underlying value of z.

tion between fathers' and sons' income look like in this case? If we regress y_1 on y_0 then the estimated value of b will be:

$$\hat{b} = 1 - \frac{\sigma_e^2}{\sigma_z^2 + \sigma_e^2}$$

Where σ_e^2 is the variance of the part of income arising as an idiosyncratic component in each generation, and σ_z^2 is the variance of the part of income that is systematic and inheritable. If these variances were equal $\hat{b}$ would be estimated as 0.5. There will thus be the classic regression to the mean.

Figure 3 shows a simulation of this where there are two social classes, with the first (shown by the squares) having an underlying inherited component of income 3, and the second (the triangles) an inherited component of 5. Around each of these means there are random deviations. But the underlying mean of each group is fixed over time. In this case there are social classes that persist. But if we just take the raw data and estimate the coefficient b in the expression:

$$y_1 = by_0 + u_0$$

Then the estimated value of b is 0.5. The dashed line shows the estimated connection. There is the classic regression to the mean.

FIGURE 3
REGRESSION TO THE MEAN WITH DIFFERENT SOCIAL CLASSES
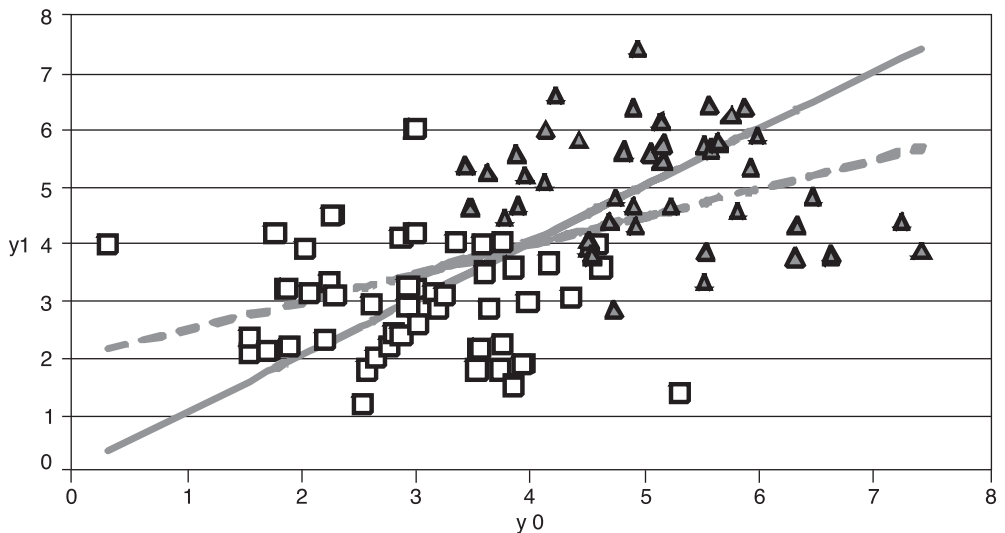
However the expected value of b in estimating the connection:

$$y_2 = by_0 + u_0,$$

between grandfather and grandson, will now be just the same as for the connection between father and son. Similarly for a father and any more distant descendant, the regression coefficient will be no greater. After one generation there will be no further regression to the mean. In this case, depending on the initial values of z there will be persistent social classes. As can be seen in figure 2 the two groups can never merge in income with this specification.

If we knew that the parents and children in figure 2 belonged to distinct groups then we could figure out by estimating:

$$y_1 = a_i + by_0 + u_0$$

for each group, that the groups were in fact regressing to different mean incomes. In the example shown in Figure 3, once we included separate intercepts for each class, the estimated b becomes close to 0 (–0.04 in fact for this example). But there are persistent classes.

Thomas Hertz carried out exactly such an exercise in a recent study of the link between parental and child income in the USA where he grouped people by race – white, black and Latino – and by religion. Table 1 shows his estimated regression coefficients, with and without dummies for race, for a sample of 3,568 parental incomes in 1967-71, and the income of adult children in 1994-2000. As can be seen simply knowing the race of someone in the USA has a powerful effect on the ability to predict their income, even once we control for the family income of the parents. It also significantly increases regression to the mean, though this time to the group mean. This holds true even if we control for all other measured attributes of parents in 1967-71 such as education, occupation, and household cleanliness[11]. These results suggest that indeed the modern USA is a society divided by class, where there is no sign of the ultimate regression to the mean and social mobility that Becker expected.

TABLE 1

REGRESSION TO THE MEAN CONTROLLING FOR RACE, USA

Independent Variable	No controls	Only Race	All Observable Parental Characteristics
Ln Family Income of Parents	0.52**	0.43**	0.20**
Black	—	–0.33**	–0.28**
Latino	—	–0.27**	–0.15
Jewish	—	—	0.22**

Notes: ** = significant at the 1 percent level. Only 3 percent of the sample was Latino.

Source: Hertz (2005), table 6.

Hertz's study looked just at the identifiable correlates of class: race and religion. There may be within these populations further hidden divisions of class – but divisions that are not marked by such outward signs as race or religion. There may thus be groups persistently at the top, and those persistently at the bottom, of the income distribution, that the simple analysis of regression to the mean cannot capture.

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[11]   Hertz (2005).

But if we do not know a priori what the social strata are – because, for example, they are distinguished by race or religion - then there will be no way of disentangling the various social classes. Presented with the raw data we would observe just the general regression to the mean of the world of complete long run mobility. So to observe whether there are persistent social classes in any society we need to be able to look at the experience of regression to the mean across multiple generations. This paper explores methods of measuring social mobility across many generations through the use of surnames.

3.   Surnames and Social Mobility: Common Names

We can track economic and social mobility using surnames because in England, from medieval times onward, children inherited the surname of the father. Surnames thus trace the patrilineal descendants of men of earlier generations[12]. Adoption in England before the nineteenth century was also very rare, so surnames also trace the path of the Y chromosome, and their later frequency can also measure reproductive success.

In looking at surnames I use two types of analysis. The first concerns common surnames – those held by many people – such as Smith, Clark and Jones. These surnames attached to the population in the Middle Ages, starting with the upper classes, and moving down to the general population[13]. By 1381 surnames were near universal[14]. Suppose that at the time of establishment surname types were a marker of economic and social status. Then we can use the social and economic distribution of surnames in later periods as a measure of the mobility of people between social classes, stretching back to the heart of the medieval era in England. By counting the share of their bearers in the population we can also measure reproductive success.

Surnames in England had at least six different origins, as shown in table 2. The first are "locative." These are surnames formed from the place – town, village, county – the bearer originated from or had their estate in. In the medieval period they were typically preceded by a French "de", though over time this was mainly dropped. Thus "Roger de Pakenham" would become "Roger Pakenham." The next category is "toponymic." These referred to the location of the person's house or farm within the village or town[15]. Patronymic names were formed typically from the father's name. A father called William could thus produce son's with surnames William, Williams, Williamson, Wilson, Wilkins, Wilkinson, Wilcocks, Wilcox: the latter were pet names for William. Nicknames were formed from personal characteristics of the person. Occupational names were formed from occupations, and in the medieval period were sometimes preceded by "le" the French "the." Thus "Robert le Smith," "John le Taylor." The occupations which gave rise to these names were typically those where there was only one such person in a village or settlement: thus Smith, Clerk, Shepherd, Cooper,

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[12]   Illegitimate children in England bore the mother's surname. But illegitimacy was uncommon in most of English history.

[13]   The Domesday book of 1086, records surnames, including combinations of Saxon forenames with Norman family names.

[14]   Surnames developed because of the limited variety in forenames. Four or five common male and female first names covered the majority of people before 1800. Surnames became essential to identification in England because it was commercial and mobile by the thirteenth century.

[15]   In early years they were often preceded by the English "at" or "atte", though this was later dropped or incorporated into the name. Thus "William atte Helle", "Edward atte Grene."

Carter. Very few people were called "laborer" or "farmer" as their surname. Occupational surnames are the names that most directly convey the original social status of the founder of the line. Table 2 also shows the calculated frequency of surname types among taxpayers in 1327-1332.

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TABLE 2

TYPES OF ENGLISH SURNAMES

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Type of Surname	Examples	Percent Taxpayers 1327-32
Locative	Walsham, Pakenham, Merton	27
Toponymic	Hill, Green, Wood, Lane	13
Patronymic	Williamson, Wilson, Adams	20
Nicknames	Brown, White, Little, Hardy	19
Occupations	Smith, Taylor, Wright, Baxter	10
Other	—	11

Source: McKinley (1990), p. 23.

In medieval England there is a strong association between surname type and economic status. We get evidence on upper class surnames in the thirteenth century from such sources as the *Inquisitions post Mortem. Inquisitions post mortem* were inquiries at the death of feudal *tenant in chief* (direct tenants of the crown), to establish what lands were held, and who should succeed to them. The holders of these properties were typically members of the upper classes of medieval England. What is distinctive about their surnames is that they commonly had the locative form, where the surname itself referred to the place where they had their major residence. Table 3 shows the distribution of surname types for this wealthy group between 1236 and 1299. 1,598 of 2,138 named deceased – some were just referred to as Earl of Warwick and the like - had names of the explicit "de" form. Only 8 had lower class occupation surnames (Archer (3), Fletcher (1), Taylor (4)). Patronyms and toponyms were also very rare: 18 and 4 respectively of the 2,138.

<div align="center">

TABLE 3

SURNAMES OF THE RICH, 1236-1299

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Type of surname	Subclass	Number	Percent of surnames
Locative	—	1,598	74.7
Toponymic	—	4	0.2
Patronymic	—	18	0.8
Nicknames	—	44	2.1
Occupations	Higher status	36	1.7
Occupations	Artisan and lower	8	0.4
Other/Unknown	—	430	20.1
No Surname	—	159	—

Source: Public Record Office (1904, 1906).

The first source we get of all surnames for England comes from the 1377-81 Poll Tax returns. These taxes, levied to support the wars of King Richard II in France and Scotland, were assessed on the entire adult population (except clerics) regardless of income or status. A still incomplete analysis of the 1381 returns for Suffolk suggests the name type distribution shown in table 4.

The problem here is that more than half of the surnames are of unknown origin (at the moment). But the share of lower class occupational surnames is still 15 percent, radically higher than for the rich of the IPM. The share of locative surnames is less than 10 percent, though this might be increased once the unknown names are added. Thus we can see the clear class distinction in early English surnames between the rich and the average person.

TABLE 4
SURNAMES 1381 POLL TAX, SUFFOLK

Type of Surname	Number	Percent
Locative	149	9.6
Toponymic	72	4.6
Patronymic	91	5.8
Nicknames	92	5.9
Occupations – high status	37	2.4
Occupations – artisans	233	14.9
Other/Unknown	886	56.8
All	**1,560**	**100**

Source: Fenwick (2001).

Even though the 1381 tax was fixed at 12d per head, and always 12d per person is accounted for in the returns, the individual amounts assessed per person in the village often varied from the 12d. A minority paid significantly more or less: 571 out of 1,470 payers where the assessment was given. It is clear that the actual payments were based on wealth. Thus for 1381 we have measures both of the general surname distribution, and also of the association with status.

Of the 60 taxpayers who paid 24d per head or more for their households, only one had an artisan surname (Skynner), and only one a patronym (Gerard). Nine had locative surnames beginning with the "de." In contrast among the rest of the assessed, 12 percent had artisan surnames (including shepherd and carter). This meant that of 221 lower level artisan surnames with assessed tax listed, only 1 was among the richest tax payers. If artisan names were evenly distributed across wealth we would expect 9 such surnames among the wealthy. Similarly of 144 persons with locative surnames, 15 were among the top 60 tax payers (as compared to an expected 6). Thus still in 1381 there was a class distinction in surname types.

The next set of data we get on the distribution of the surnames for the rich comes from the wills probated at the Prerogative Court of Canterbury (PCC) 1384-1858. Before 1858 wills were dealt with in ecclesiastical courts. But there was a hierarchy of these courts, with more modest estates probated in local courts and more substantial wills dealt with in the major

courts at Canterbury and York. Canterbury was the most important of the ecclesiastical courts that probated wills, dealing with relatively wealthy individuals living mainly in the south of England and Wales (the original ecclesiastical province of Canterbury).

More than 1 million of these wills survive, with Table 5 showing the frequency in terms of distribution by century. Normalizing by the number of adult deaths per year gives an impression, in the last column, of the share of the population they covered. By the eighteenth century 4 percent of those dying in England and Wales would leave wills probated in the Canterbury court. Allowing for those dying intestate, and the fact that will makers were more likely male, represented perhaps the top 10 percent of wealth distribution. In earlier years PCC wills represented a much smaller fraction of deaths, so they may represent a smaller share at the top of the wealth distribution[16].

TABLE 5
DISTRIBUTION OF PREROGATIVE COURT OF CANTERBURY WILLS

Century	PCC wills	Population (millions)	Wills/year/death
1384-99	87	2.5	.0002
1400-99	5,915	2.3	.002
1500-99	45,555	3.3	.010
1600-99	218,624	5.2	.029
1700-99	361,827	6.7	.040
1800-58	384,119	14.6	.036

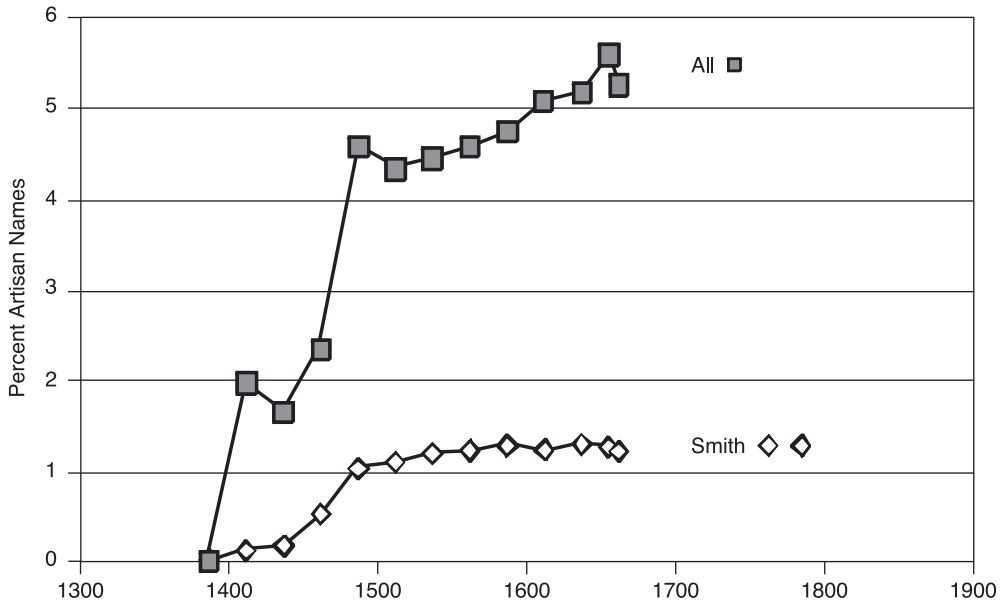Source: Index to the Prerogatory Court of Canterbury Wills.

Over time, particularly over the years 1400-1500, the distribution of names in the Prerogative Court of Canterbury wills changed markedly. Names associated with lower class origins were not found in any PCC wills before 1400, but by 1500 they had risen to what was likely close to the shares of these names in the general population. Figure 4 shows this process for names associated with artisans. The most common of these is the decidedly unglamorous surname "smith," most of whom would have an ancestor who was a simple village blacksmith. "Smith" was held by 1.33 percent of the English population by 1853.

By 1850-58, "smiths" represented 1.27 percent of the surnames of all Prerogative Court of Canterbury will makers, so they were nearly equally represented among the rich as among the general population. Before 1400 the percentage of smiths in PCC wills was 0, but it rose by 1550-74 to 1.22 percent. So already by 1550 the "smiths" were as well represented as a share of the rich in England as they are in the general population: assuming the share of smiths in the general population did not change between 1550 and 1853.

Using a wider set of artisan surnames in addition such as Taylor, Baker, Cook etc. shows the same result. Rapid upwards mobility in the fifteenth century, followed by a rough constancy of shares thereafter. Thus it took only about 150-250 years, 4-7 generations, for the descendants of the original modest artisans to be absorbed completely representatively into the wealthiest groups in England.

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[16]   One problem is that Prerogative Court of Canterbury wills include anyone in England dying abroad, which would include numbers of relatively poor sailors and soldiers from the outposts of the British Empire.

FIGURE 4

PERCENT ARTISAN NAMES IN PREROGATIVE COURT OF CANTERBURY WILLS

Source: Index to the Prerogatory Court of Canterbury Wills.

We can get an even finer slice of the rich from the PCC wills by focusing on those labeled "gentleman." This came to represent about 12 percent of all those leaving PCC wills by 1575 and later[17]. Figure 5 shows the fraction of all testators called "smith" (by 25 year periods) as well as the fraction of all "gentlemen" testators called "smith." The numbers in these cases being much smaller, there is much more noise in the data. But the same pattern appears. By 1550 smiths are as well represented among gentleman as they are later in the general population. They seem to have moved to be fully represented in the higher strata of the society long before the era of modern growth.

The speed of this observed social mobility in the medieval period depends on when inherited surnames amongst the lower classes first widely appeared. If that was by 1200 then it would have taken 350 years for regression to the mean to have worked its magic. If it was 1350 then the process took only 200 years to completion, which is six generations. Judging whether surnames were inherited, or were merely temporary by-names, is difficult, however, from the existing tax and court lists of the medieval period. In 1381 occupational surnames still correlated with actual occupations. Vastly more than a chance number of people worked in the occupation that would be implied by their surname. Of 35 carpenters, for example, 7 bore the name "wright." If surnames by then had become completely hereditary, then either they were formed within a very few generations of 1381, or there was strong intergenerational persistence of occupations.

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[17]   Earlier most wills have no indication of the occupation or status of the testator.

FIGURE 5

"SMITHS" AS A FRACTION OF "GENTLEMAN" IN PREROGATIVE COURT
OF CANTERBURY WILLS
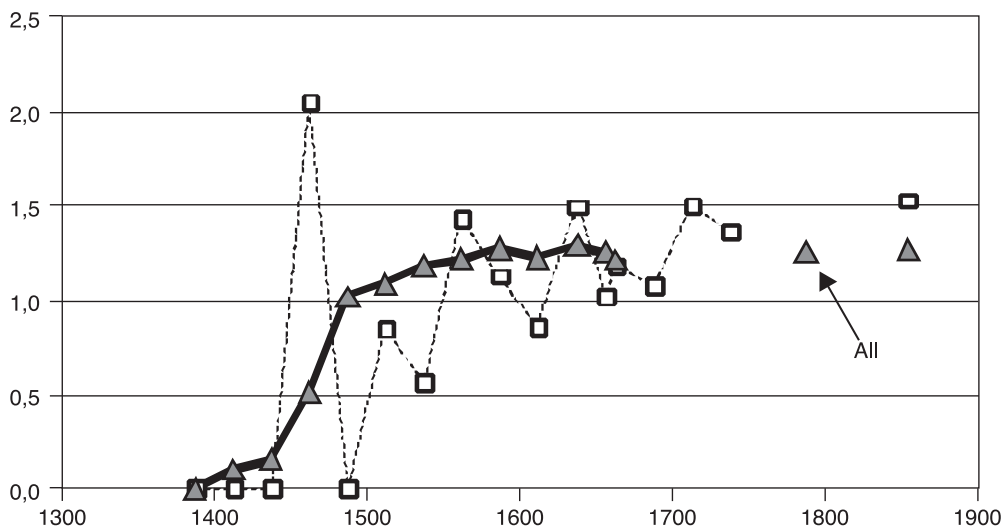
Source: Index to the Prerogatory Court of Canterbury Wills.

The 1381 data thus suggests that at this date surnames carried significant information about the economic status of the bearers. It is puzzling, however, that the frequency of occupational surnames is greater than in later populations, even populations as early as 1600. Table 6 thus shows the frequency of a group of common artisanal surnames in Suffolk in 1381. In comparison it shows these surname frequencie in three samples of names in the 1850s: the PCC wills, the accused at the Old Bailey criminal court in London, and the population at large. Somehow the share of artisanal names declined over time[18]. I posit an explanation of this decline below, but since we do not know when this decline occurred, it implies that it is possible that there had not been complete convergence towards the mean by 1600 by those with artisanal surnames.

However, I can check this by using measures of name frequency at the very lowest end of the income/status spectrum for these years, which were the surnames of laborers who also were criminals, typically petty criminals. These are derived from the assize indictments of Essex for the years 1559-1625, which yields 2,153 male surnames for laborers: the majority of the indicted were "laborers". As table 6 reveals, leaving aside the "smiths", the percentage of those with artisan names among this group was only modestly higher than for the PCC will makers: 4.2 percent versus 3.9 percent. Regression to the mean was largely complete by 1600, in the sense that those with artisan forbears had diffused almost equally into the top and the bottom rungs of the society.

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[18]   The large share of the name "smith" among the accused in the Old Bailey records seems to come from the accused giving false names. Also in the criminal records circa 1600 "smith" is surprisingly common.

TABLE 6

SURNAME TYPE FREQUENCIES

Group	Number	Percent "Smith"	Percent Other Artisan Names
Suffolk, 1381, Poll Tax	1,560	1.6	9.2
England, all, 1853	—	1.4	3.8
PCC wills, 1850-8	66,807	1.3	4.0
London, indicted, 1850-9	15,705	3.0[a]	4.1
PCC wills, 1600-24	31,690	1.2	3.9
Indicted Laborers, Essex 1559-99	1,262	1.7[a]	4.1
Indicted Laborers, Essex 1600-25	891	2.2[a]	4.4

Notes: [a] The share of "smiths" among the indicted is always unexpectedly high, presumably because some criminals use alias's, and in doing so choose the most common name.

Source: Fenwick (2001); Annual Report of the Registrar General (1856); Index to the Prerogative Court of Canterbury Wills, The Proceedings of the Old Bailey; Cockburn (1978, 1982).

The upward mobility of the artisan surnames implies equivalent downward mobility of the names associated with the upper classes in the middle ages, and also of their descendants. Since the upper classes were typically named after their main place of residence we do not, however, expect there to be a high frequency of any particular upper class name. They all started out as relatively rare names. We thus have to form a pool of these names and, see what happens to its frequency over time.

With rarer names there is a problem of their mutation over time. Since they are not anchored to a well known form, like "smith", they can and will mutate, especially for names of foreign origin if their original meaning and significance is lost. Thus in forming a 10 percent sample of the upper class names of 1236-1299 from the Inquisitiones Post Mortem I have deliberately favored those names that correspond to places in England – names such as Essex, Luton or Polstead - since this will tend to anchor the form of the name over time.

Figure 6 shows what happens to the share of the surnames of the elite held by this group. By the fifteenth century these surnames had declined to be only 1.7 percent of Canterbury wills. That decline continued century by century, but at a slowing pace: 16th century, 0.9 percent, 17th 0.68, 18th 0.65, and 1800-59 0.60 percent. For the years 1700-99 and 1800-59 we can compare these percentages both with the percentage of victims in criminal trials in London who had these names and the percentage of the accused. The victims and defendants in the Old Bailey are a good sample of the surname shares of the general population, since there was so much migration into London in each generation.

Table 7 shows this comparison. Interestingly nearly six hundred years after the identification of this group of names with the rich it is still the case that the bearers, 16 generations later, were better represented among the rich than among those accused of crimes. However, this overrepresentation was only in the order of 10-25 percent. There had thus been very strong diffusion of the descendants of the rich into the lowest classes, and that diffusion, as figure 6 shows, was largely complete by 1650. The Beckerian vision of the profound equality of societies once a long enough time interval is considered is once again vindicated.

FIGURE 6

PERCENT OF IPM AND PCC SURNAMES FROM SAMPLE OF MEDIEVAL ELITE
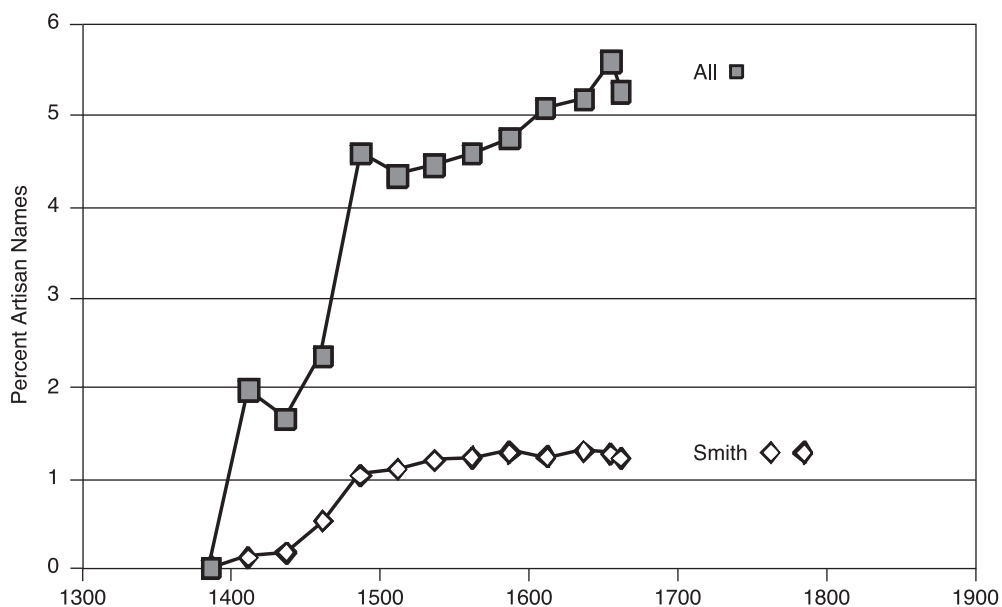
Note: The vertical axis has a logarithmic scale. The solid line shows the percentage of PCC will makers with a surname from the sample group of medieval elite. The diamond indicates the share of Suffolk Poll tax payers in 1381 with a surname from this group. The triangles represent the percent of crime victims in the Old Bailey records with the surnames of the sample of medieval elite. The squares show the percent of the accused in the Old Bailey records with these surnames.

Source: Index to the Prerogatory Court of Canterbury Wills. The Proceedings of the Old Bailey. Fenwick (2001). Public Record Office (1904, 1906).

TABLE 7

SHARES OF SURNAME SAMPLES AMONG THE RICH, THE POPULATION AS A WHOLE, AND THE POOR

Surname Group	Period	PCC wills (%)	Old Bailey Victims (%)	Old Bailey Accused (%)
Medieval Elite	1700-99	0.65	0.63	0.58
Medieval Elite	1800-59	0.60	0.53	0.46
Artisans	1830-59	3.82[a]	3.90	4.25
Irish	1830-59	0.67[a]	1.18	3.69
Scottish	1830-59	—	2.04	2.01

Notes: [a] The PCC will shares here are for London and Middlesex in the years 1850-8, to partially control for the youth of the Irish immigrant population compared to the general population, and its concentration in urban locations.

Source: Index to the Prerogatory Court of Canterbury Wills. The Proceedings of the Old Bailey.

Common English surnames thus largely lost any association with social status by 1600. However, the nineteenth century saw substantial migration into England, principally by the Irish. By 1841 there were 289,000 people of Irish birth living in England. Many Irish surnames, particularly those of Gaelic origin, are quite distinct from those of England. Table 7 also shows the share of defendants and victims in the Old Bailey in London in 1830-1859 with such Irish surnames. For comparison the same percentages are shown for English artisan surnames (except for the surname "smith", for the reasons discussed above). Also shown is the share of PCC wills made by people with these surnames resident in London or Middlesex in 1850-8. The later date for the wills was adopted because the Irish population would have been relatively young and growing over time[19].

For native artisan names, the share of will makers, victims and defendants is very similar. The bearers of artisan surnames are spread evenly from top to bottom of the social hierarchy. However, the bearers of Irish surnames are heavily concentrated at the bottom of the social ladder. They are three times as likely to the defendant in a criminal trial, than the victim of a crime. They are also between 5 and 6 times as likely to be a criminal defendant, than to make a will proved in the high status Canterbury Court. Thus we can potentially use such immigrant groups to measure, using common names, the rate of upward mobility in the years 1800 and later. In the 150 years between 1850 and 2009 have the Irish achieved complete upward mobility within English society?[20].

4. Social Mobility 1600-2009: Rare Surnames

England surnames exhibited from the earliest years astonishing variety. The 56 million people in England and Wales in 2002 had nearly one million distinct surnames, 750,000 of which were held by fewer than 5 people[21]. 3 percent of the English population had surnames held by fewer than 5 people.

This may stem in part from emigration, and the creation of new surnames, but the 1851 census suggests that there was in England always an enormous variety of surnames. In both 2002 and 1851 the most frequent 40 surnames covered only 13.1 percent of the population. There has always been a very long tale of rare surnames[22].

We have a good measure of what surnames were rare in England in 1601-2 through two books documenting the occurrences of surnames in 964 parish registers in England in 1601 and 1602, a tenth of all English parishes[23]. A surname only appeared in the parish registers if a holder had a baptism, wedding, or burial. The average person, in the course

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19   The percent of victims and defendants with names of distinctively Scottish origin is included as another control. If the low ratio of victims to accused for the Irish was a consequence of their immigrant population having a skewed age structure then we would expect that other recent immigrant groups such as the Scots would show a similar pattern.

20   This test is complicated by continuing Irish immigration into England between 1850 and 2009, but a large share of the modern stock of people with distinctively Irish surnames in England in 2009 would have ancestors who arrived before 1914.

21   The Office of National Statistics in the UK created a database of surnames in England and Wales in 1998 which was updated with births to 2002. See http://www.taliesin-arlein.net/names/search.php.

22   The polymath Galton also investigated surnames, and their frequency distribution over time. Walton and Galton (1875).

23   Hitching and Hitching (1910, 1911).

of an average lifespan of 35 years, would appear three times in the registers. This implies that these registers contained a 1.8 percent sample of English surnames in 1601-2, about 73,000 names.

If this was a true random sample of names, a name held by as few as 400 people in England would have a 99.9 percent chance of appearing on the list. Surnames held by as few as 41 people would have an even chance of appearing. Only rare names would escape this sieve. In practice it is not that good, but good enough for our purposes[24].

I can employ rare surnames to measure social mobility after 1600, when common surnames are uncorrelated with economic and social status. Here I identify two groups of rare surnames in England 1560-1640. The first was rare surnames held by economically successful men, as revealed by their leaving a will. The second group was rare surnames held by a man on the margins of society, someone indicted in the Essex courts in the years 1598-1620 for assault, burglary, theft, poaching, robbery and murder. The indicted were overwhelmingly from low socio-economic groups.

For rare surnames a significant fraction of the holders will typically be related: brothers, cousins, second cousins. We know wealth and social status was strongly correlated between fathers, sons and brothers[25]. Thus the average man holding the same rare surname as a wealthy man in 1600 will be relatively wealthy. The average man holding the same rare surname as someone indicted in 1600 will be relatively poor. That is we can identify a subset of rare surnames where the typical holder was wealthy or poor in 1600.

I can confirm the validity of the premise that holders of rare surnames tended to have correlated wealth or status, using data on wealth at death in the period 1580-1640. Table 8 reports on such names held by at least two testators. We can group these surnames by how often they appeared in the parish registers sample of 1601-2. We have, for example, 88 surnames in this sample that do not appear in the 1601-2 parish register sample – the rare names. We also have 93, such as "smith" that appear twenty or more times, the common names. The rare surnames were held by on average 2.4 testators, while the common names were held by 6.0 testators. Column four shows the standard deviation of the log of estimated wealth of testators[26]. It is similar across names by their frequency in the parish registers 1601-2, suggesting that rare and common names are equally distributed across wealth groups.

Column 5 shows the average standard deviation of log wealth, within each individual surname within each frequency class. If there is no correlation in wealth between holders of surnames, then the average standard deviation in column 5 will be the same as that in column 4. For the commonest surnames this is nearly the case. But as surnames get rarer the correlation in wealth between men with this name increases. Observing that someone holding such a name is wealthy suggests that the average bearer in 1600 will also be wealthy. Observing that someone holding the name is poor, suggests the same of the average bearer of the name.

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[24] In practice names are clustered by parish so that the sieve provided by these parish lists is less fine. Some quite common names will not be excluded. The name "Emery," for example, is not excluded even though there were more than 3,000 Emerys in England by 1851. To control for the inclusion of some not very rare names in my 1600 samples I look at the *median* occurrence of the surname 250 years later (rather than the mean). This avoids giving undue weight to common names that slipped through. But the typical name not excluded will be held by very few people. The name *Spyltimber*, for example, which showed up among the indicted, and which had disappeared by 1841, was excluded since it appeared in a register in 1601.

[25] Clark (2008).

[26] Since some testators had 0 estimated wealth this is actually the standard deviation of the log of (wealth+1).

TABLE 8

THE VARIANCE OF WEALTH CONTROLLING FOR SURNAME FREQUENCY

Surname Count 1601-2 Parish Sample	Name count in will sample	Average surname frequency in will sample	Standard Deviation of Log Wealth	Standard Deviation of Log Wealth by surname	Difference of Standard Deviations
0	88	2.4	1.80	1.18	0.62
1	51	2.6	2.10	1.52	0.58
2-3	45	2.8	2.07	1.66	0.42
4-5	37	3.7	1.98	1.59	0.39
6-9	38	3.5	1.91	1.64	0.27
10-19	62	3.6	1.83	1.44	0.40

Source: Parish Sample - Hitching and Hitching (1910, 1911). Wills Sample - Allen (1989, 1995,);Allen and Evans (1986a, 1986b); Emmison, (1994-2001); Evans (1987, 1993).

Thus using the rare surnames we can once again form samples of rich and poor distinguished by surnames in 1600. We can use these samples to track the long run social mobility of rich and poor in England from 1600 on.

The English censuses of 1841-1891 which give names and occupations, have been at least partly digitized, allowing me to track what happened to the numbers and social status of the descendants of those bearing rare surnames by the late nineteenth century[27].

A problem in categorizing surnames is that English spelling was highly irregular before the nineteenth century. The same surname would have many different variants. Johnson in 1601-2 was spelled Johnson, Johnnsone, Johnsone, Johnsonne, Jonson, Jonsson, Jhonson. "e" was added promiscuously to the end of names, without seemingly affecting the pronunciation. "y" and "i" were interchangeable. To control for this I checked for variant spellings of surnames in 1601-2 and 1851 in determining their frequency in 1600 and 1851. Thus, for example, if a name ended in –y, I also checked for the same stem ending in –ie and –ey. If the name had a "ck" I also checked it with only a "k".

Spelling variants introduce errors, but not errors that should favor the names of the rich versus the poor. We can check this, however, in our data by looking at the relative frequency of spelling variants, versus the originally spelled name in the case of the rich and the poor. This will test whether the names of the rich somehow were more fixed in their original form because of their greater literacy.

Another source of error that cannot be controlled for, is the mutation of surnames over time[28]. Partly this can occur because of shifts in the way names are pronounced, leading to a later shift in spelling. Thus the wills and court records for 1600 show a ratio of "Clarks" of various stripes of 6:1 with "Clerks." By the 1841 census there were 73,049 "Clarks" and only

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[27] http://www.ancestry.co.uk/ In measuring the numbers of descendants greater illegitimacy rates by the poor and the indicted would not affect the outcome, since offsetting any loss from children of men or their sons not bearing the surname will be illegitimate children of their daughters who will bear the surname.

[28] As an extreme example, the surnames Birkenshaw, Bircumshaw, Burkimsher, Burtinshall, Brigenshaw, Buttonshaw, Brackenshaw, Buttinger, and Bruckshaw all apparently stem from the place name Birkenshaw. McKinley (1990), p. 55.

835 "Clerks" a ratio of nearly 100:1. Some of the "Clerks" mutated to become "Clarks"[29]. Again the errors introduced by such mutations should not tend to favor the rich versus the poor, unless again the names of the literate rich are less subject to mutation.

5. Rare Surnames, circa 1600

I get a sample of rare surnames held by rich men in 1560-1639 from a database of 2,445 wills probated in these years, mainly in the counties of Essex and Suffolk[30]. 689 of these men, 28 percent, had names which did not appear on the parish registers lists for 1601-2, and thus were rare names. We can further divide these testators with rare names into rich (bequest of £250 or more), middling (£25-250), and poor (£0-25), where wealth is measured in 1630s prices.

Those leaving wills represent the upper end of the social scale and asset distribution in pre-industrial societies. Identifying rare surnames held by men in the poorest social strata is more difficult. Most tax lists for pre-industrial England identify the propertied. The civil and manorial court records again tend to identify individuals with property to transact or dispute. One place where the poor do show up, however, is in criminal indictments. As in modern societies those accused of theft, forgery, assault, riot, robbery, murder, and desertion were disproportionately the poor.

For the reason that I am attempting to get a sample of the poorest and most violent, I excluded from this sample men indicted for what were crimes against regulations in restraint of trade, or of religious orthodoxy: keeping an unlicensed alehouse, baking without license, erecting cottages on less than 4 acres of land, and recusancy. From this sample of 1,523 indicted men, we get 374 (25 percent) who have rare surnames, a similar percentage to that for the sample of will writers.

There is some overlap between rare names held by the indicted in this period and rare names held by will writers. This in part reflects some relatively common names escaping the parish register sieve. I thus use a second filter to form the final samples, which is to exclude from the wills sample any names found among the indicted, and from the indicted sample any names found among will makers.

In the resulting smaller samples there are some names that occur more than once among both the indicted and the will writers. Names with multiple occurrences in 1600 also tend to appear with greater frequency in 1851, because they were always more common. In the statistical tests below, I include each occurrence of such names as an observation. Otherwise the size of the initial sample matters in terms of the median frequency of the occurrence of names later. Smaller samples will contain proportionately more common names, and have higher median numbers later. Since I have unmatched sample sizes this is undesirable.

The men in the two resulting samples are from very different ends of the social spectrum. Table 9, for example, shows the distribution of the occupations of 494 men leaving estimated assets of at least £250 in England 1560-1640, compared to the distribution for 1,523 men indicted in Essex courts 1598-1620 for property crimes, assault and homicide. 54% of the

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indicted were classified as laborers or the equivalent, compared to 0.2% for the rich. Overall the bottom four social groups were 6% of the rich, 81% of the indicted[31].

TABLE 9

OCCUPATIONAL DISTRIBUTION: THE RICH AND THE INDICTED

Social Group	Bequest of £250 or more (%)	Indicted (%)
Gentry	17	2
Merchants/Professionals	8	1
Farmers/Yeomen	70	6
Traders	2	9
Craftsmen	2	13
Husbandmen	2	11
Laborers	0	54

Sources: Wills – Allen (1989, 1995); Allen and Evans (1986a, 1986b); Emmison (1994-2001); Evans (1987, 1993). Indicted – Cockburn (1978, 1982).

Table 10 shows a random sample of 10 percent of the names of the indicted and of 5 percent of the names of the rich, constructed by arranging them in alphabetical order and selecting each 10th, or 5th, name. As can be seen the names seen very similar in form, and otherwise undistinguishable.

TABLE 10

RARE NAMES OF THE INDICTED AND THE RICH IN 1600

Names of the indicted	Names of the Rich
Abstan	Aldham
Banbricke	Ayliffe
Bittin	Base
Bradwyn	Birle
Cabwell	Breame
Cheveney	Bynder
Cockle	Cobbold
Creame	Coventry
Cutmore	Danbrook
Drinckall	Fatter
Elvis	Folkes
Fossett	Gatteward
Gillham	Godbold
Gullyes	Gooch
Heditche	Hazell
Hownell	Hunringdon
Kenwood	Ilger
Los	Kingsberie

_____

[31]   Those accused only of petty larceny were on average even lower in the social scale. 61% of them were laborers or the equivalent.

TABLE 10 *(continued)*

RARE NAMES OF THE INDICTED AND THE RICH IN 1600

Names of the indicted	Names of the Rich
Meese	Libbis
Mounson	Maynerd
Nouthe	Negus
Osteler	Overed
Pennocke	Playfere
Pollen	Raynberde
Reddyforde	Rosington
Sache	Scolding
Segrave	Spatchet
Shurly	Tokelove
Sticinger	Upston
Terlynge	
Thurland	
Uphavering	
Wendham	
Wrothman	

Source: 10% random sample of the wills collection rare names, 5% random sample of the indicted rare surnames.

6. Social Mobility, 1600-1851

We saw in table 9 the very different occupational distribution for each group around 1600. What is the occupational distribution of their descendants by 1851 revealed by the census, seven generations later? In line with the earlier results for 1300-1600 on common names, there seems to be almost complete regression to the mean. Table 11 shows the socioeconomic status of a sample of adult men of both name groups, taken from the names with the less frequent occurrences. While those descended from the rich show a slightly greater percentage in the top socio-economic groups, that result may well be sampling error. And at the bottom of the socio-economic scale, there are more of the descendants of the rich among "laborers" than there are descendants of the indicted.

TABLE 11

SOCIOECONOMIC STATUS BY SURNAME HISTORY, 1851

| Status, 1851	Rich in 1600 (percent)	Indicted in 1600 (percent)
Gentry/Professionals	6.1	4.1
Farmers	4.7	3.7
Laborers	31.5	28.6
Number in Sample	**278**	**294**

Source: UK, Census (1851).

If we compare these results to occupational distributions of England as a whole we find both groups have regressed to the mean. They are indistinguishable from each other and from the population as a whole. This implies both great downward mobility among the descendants of the rich, and modest upward mobility among the descendants of the indicted. The fraction of the descendants of the indicted among the lowest social group, laborers, declined from 54 percent circa 1600 to 29 percent in 1851.

6.1. The Rewards of Wealth, 1600-1851

While there was complete regression to the mean in terms of economic status, we do observe that the rich of 1600 left many more descendants than the poor. Though there was geographic mobility in the English population in the pre-industrial era, people holding rare surnames in 1851 related to those we observe circa 1600 would tend to live close to their ancestors. Figure 7,

**FIGURE 7**
DISTRIBUTION OF THE SURNAME "BENEFIELD" IN 1881

Least   Most
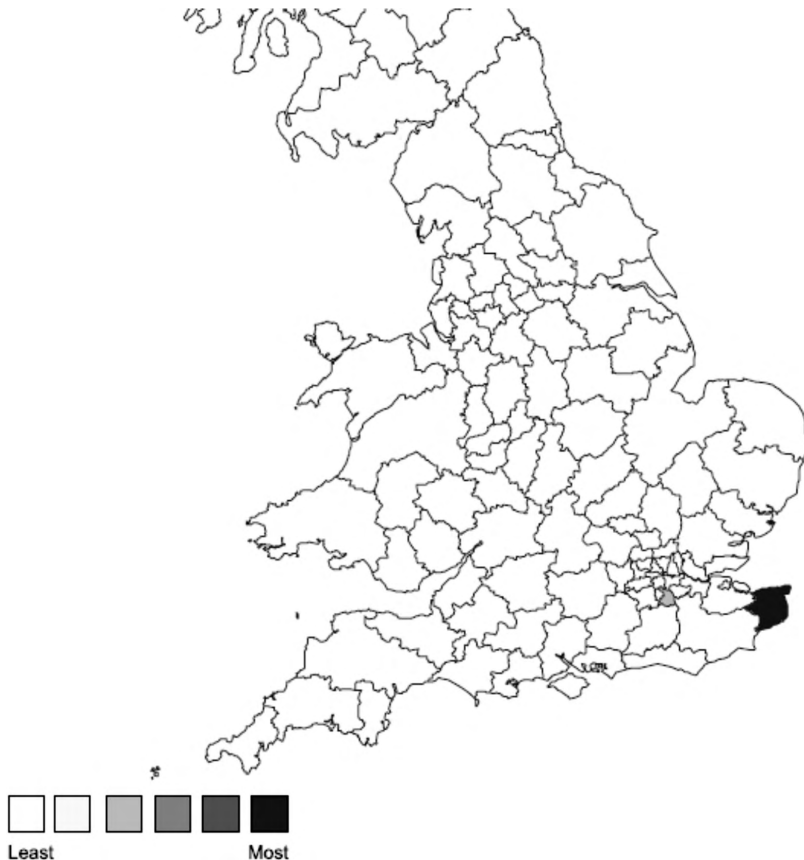
Source: National Trust, UK. Surname location database, created from the 1881 UK census. Available online at http://www.nationaltrustnames.org.uk/Surnames.aspx.

for example, shows the distribution of people with the rare surname "Benefield" in 1881. As can be seen this population is concentrated in east Kent and the nearby city London.

The data for the indicted is taken from Essex, and most of the wills come from Essex or the adjacent county Suffolk. Figure 8 shows these two counties, as well as the set of adjacent counties. Surrey was included as adjacent even though it is not contiguous to Essex, because the big destination of out migration of people from Essex and Suffolk before 1841 was the London area, part of which lay south of the river Thames in Surrey. In 1841 these eight counties had 28 percent of English population.

FIGURE 8
ENGLISH COUNTIES IN 1841
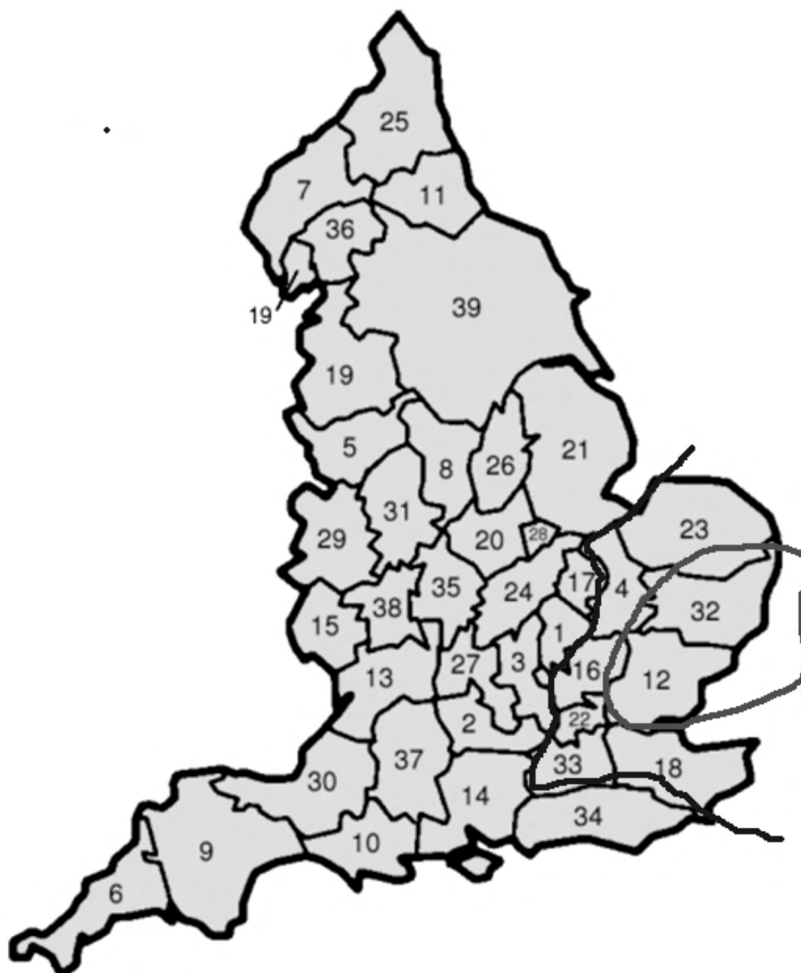
Notes: Suffolk = 32, Essex = 12 (adjacent counties are Norfolk (23), Cambridge (4), Hertford (16), Middlesex (22), Surrey (33) and Kent (18)).

Source: This map is reproduced from http://en.wikipedia.org/wiki/Historic_counties_of_England.

Under the hypothesis is that the differential survival and spread of rare surnames by the rich of 1600 is caused by the differential reproductive success of groups of people genetically related then this effect should be strongest if we concentrate on the South-East. By doing that we will be concentrating on the people in 1851 most likely to be actually related to the men in the 1600 samples, as opposed to be related by orthographic accident.

Table 12 shows the results for the medians frequency of each name group in the South-East in 1851. The median number of occurrences of the names of the rich by 1851 is 7 times as great as for the indicted. In contrast in the country outside the South-East the difference in name occurrence by 1851 between the will makers and the indicted, while still present, is muted. Rare names of the rich show only twice the median number of occurrences as the rare names of the indicted. Table 13 shows these results.

TABLE 12

SUMMARY OF THE RESULTS FOR THE SOUTH EAST

Group	N South-East	Fraction of names 1851 in South East	Median Frequency 1851	Name disappeared by 1851 (percent)
Indicted	337	0.46	9	35
Poorest Testators	147	0.62	36	21
Middling Testators	289	0.62	48	19
Richest Testators	204	0.67	67	17

Source: *UK, Census* (1851).

TABLE 13

SUMMARY OF THE RESULTS FOR THE REST OF THE COUNTRY

Group	N South-East	Fraction of names 1851 outside South East	Median Frequency 1851	Name disappeared by 1851 (percent)
Indicted	337	0.54	9	33
Poorest Testators	147	0.38	19	24
Middling Testators	289	0.38	22	24
Richest Testators	204	0.33	20	20

To test the statistical significance of the median differences reported in table 12 I carry out two tests. The first looks just at the differences in the medians, and is a non-parametric test of the hypothesis that two samples were drawn from a distribution with the same median. The chances that by 1851 the names in each of the three wills samples have the same median number of occurrences as the indictments sample is always less than 1 percent. The second test, that of Mann and Whitney, looks not just at the medians, but the whole rank of the observations. This tests not just the median, but whether the samples are from populations with the same distribution of values. This test rejects even more strongly the possibility that the distribution of frequencies for the names of the indicted by 1851 is the same as that for any of the will samples.

Might the indicted have been significantly more likely to deliberately change their name, perhaps to escape social census of the long arm of the law? We saw above the surprising frequency of "smiths" among the criminal classes, including this group in 1600. But the extent of deliberate name changes required to produce the differences in name frequencies is implausibly large.

I can also test whether the names of the rich adhered to them better because they could write, and thus the name would mutate less over time. To test this I look at the fraction of matches for each name in 1851 that were exact matches to the earlier name as opposed to just similar sounding matches (*Adwicke* as the original, for example, compared to the similar sounding *Adwick* or *Addwick*). Table 14 shows the results of this test for the names of the indicted and the will makers using cases where there were less than 300 bearers of the name in any spelling by 1851. The names of the rich were just as likely to be found in variant spellings from that originally observed as were the names of the indicted. Thus there is no evidence that the names of the poor were any more mutable than those of the rich.

The implication is simple. Economic success by a man in 1600 substantially increased his share of their genes in the English gene pool by 1851, as was predicted in *A Farewell to Alms*. The genes of the English in 1851 were composed disproportionately of those who succeeded economically in the pre-industrial era. This can also explain the decline in the frequency of "artisan" surnames after the fourteenth century. As initially a lower income group within the population they would have less reproductive success than other higher income groups, and thus see a decline in the share of their surnames among the population.

TABLE 14

EXACT VERSUS INEXACT NAME MATCHES 1851

Group	Number	Matches under original name, 1851	Matches under variant spellings	Percent of matches to the original spelling
Indicted	278	18.4	35.7	52
Poorest Testators	159	28.6	52.8	54
Middling Testators	297	27.1	54.1	50
Richest Testators	206	28.3	64.5	44

Source: *UK, Census* (1851).

7. Further Research

This paper largely serves to set out a proposed method of investigation, using surnames, and give some preliminary results. These preliminary results clearly show astonishing social mobility in both the periods 1250-1600, and 1600-1841. But much more can be done. For the years 1850-2009 tracing social mobility would again require finding holders of rare names of high and low status. The census records of 1841-1891 make it easy to determine which names were rare. To construct a low status sample of such names circa 1850 we have the records of the Old Bailey. For high status groups we can consult the records of the Principle Probate Registry which records all wills probated from 1858 to the present, as well as giving an indication of the value of the bequest. The distribution of these rare names across both

ends of the social spectrum in 2009 can then be determined by looking at the percentage of those leaving substantial assets in 2009 who fall into each name group, compared to the percentage of those with criminal convictions. Since wills record wealth at the end of life, we can find in 2009 a younger contemporary high status group through such things as membership in Parliament, in the legal profession, in the Royal Society, and in Professional Organizations.

Thus it seems possible to construct for England for all the years 1250-2009 measures of surname frequency across the elites of the society, and for at least the years 1558-2009 measures also of surname frequency amongst the poorest members of the society. As long as we can find in some period a correlation between surnames and social status, we can use the later frequency of surnames in these two strata to measure whether regression to the mean worked throughout English history as free market economists such as Becker predicted. For the years 1250-1850 regression does indeed seem to have worked its magic. It is an open question whether in the last 150 years social mobility was maintained at this high level.

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