

Introduction

*Of Ruling Classes and Underclasses:
The Laws of Social Mobility*

FIGURE 1.1 SHOWS A BOY IN GOVAN, a grim, deprived district of my hometown, Glasgow, in my youth in the 1970s. Will his children, grandchildren, and great-grandchildren be found in similar circumstances? To what extent would the chances of a middle-class child of equal ability, placed in the same family in Govan, be reduced by the poverty of his parents? Figure 1.2, in contrast, shows the pleasant suburban Glaswegian street I grew up in, appropriately named Richmond Drive. To what extent is the status of the children raised in that street predictable just from that picture? To what extent would their fortunes have changed had they been raised in Govan?

These questions have, of course, been the subject of extensive enquiry by sociologists and economists.¹ Most people believe that high rates of social mobility are fundamental to the good society. How can we justify the inequalities of income, wealth, health, and longevity so characteristic of the capitalist economy unless any citizen, with sufficient courage and application, has a chance of attaining the grand prizes? Why wouldn't those in the bottom half of the income distribution in a democracy punitively extract resources from the top half if they have no prospect of ever obtaining these goods through the market system?

A convenient summary measure we can use for intergenerational mobility is the correlation of the income, wealth, education, occupational status, and even longevity, of parents and children. This correlation varies from zero to one. Zero represents complete intergenerational social mobility, with no correlation

¹ An online search of books and articles containing the phrase *social mobility* yields 244,000 items.



FIGURE 1.1. Boy playing football in Govan, Glasgow, Scotland, 2008.



FIGURE 1.2. Richmond Drive, Cambuslang, Glasgow.

between generations: under these conditions, we can predict nothing about children's outcomes from the circumstances of their birth. A correlation of one represents complete immobility, with a perfect correlation between the status of children and parents: we can predict at birth the entire outcome for any child.²

This intergenerational correlation is closely related to another important concept, that of the rate of *regression to the mean* (calculated as one minus the correlation). This is the average rate at which families or social groups that diverge from the mean circumstances of the society move toward that mean in each generation. Thus we refer to the intergenerational correlation as the *persistence rate* of characteristics. The intergenerational correlation can be interpreted as a measure of *social entropy*. The lower this correlation, the greater the degree of social entropy, and the quicker a particular structure of advantage and disadvantage in any society is dissolved.

The intergenerational correlation also has a convenient intuitive interpretation. The square of the correlation is the share of the variation in social status that is explained by inheritance. That share will also be between zero and one. For practical purposes, if the correlation is less than 0.3, then the square is 0.09 or less, suggesting that almost none of the outcomes for the current generation are predictable from parents' circumstances. In such a society, each generation is born anew. The past has little effect on the present. The intergenerational correlation thus indicates the degree to which the accidents of our birth, or, more precisely, our conception, determine our fate.

Most people believe, from their own experience of families, friends, and acquaintances, that we live in a world of slow social mobility. The rich beget the rich, the poor beget the poor. Between the Old Etonian and the slum dweller, between Govan and Richmond Drive, lies a gulf of generations. But a hundred years of research by psychologists, sociologists, and economists seems to suggest that this belief is fictional. Conventional estimates imply that social mobility is rapid and pervasive. The Old Etonian and the slum dweller are cousins.

Standard estimates suggest high modern intergenerational mobility rates. Figure 1.3, for example, shows estimated intergenerational correlations of earnings across a variety of countries. That correlation ranges between 0.15 and 0.65. But these rates imply that inheritance explains only 2 percent to 40 percent of the variation in individual incomes in any generation. Figure 1.4 shows the

² Appendix 1 explains these concepts in more detail.

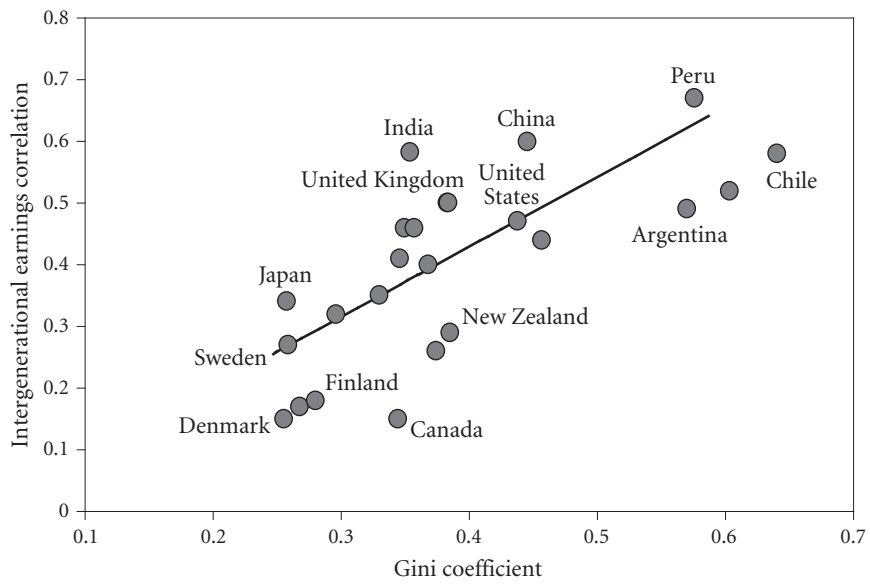


FIGURE 1.3. Intergenerational earnings correlation and inequality.

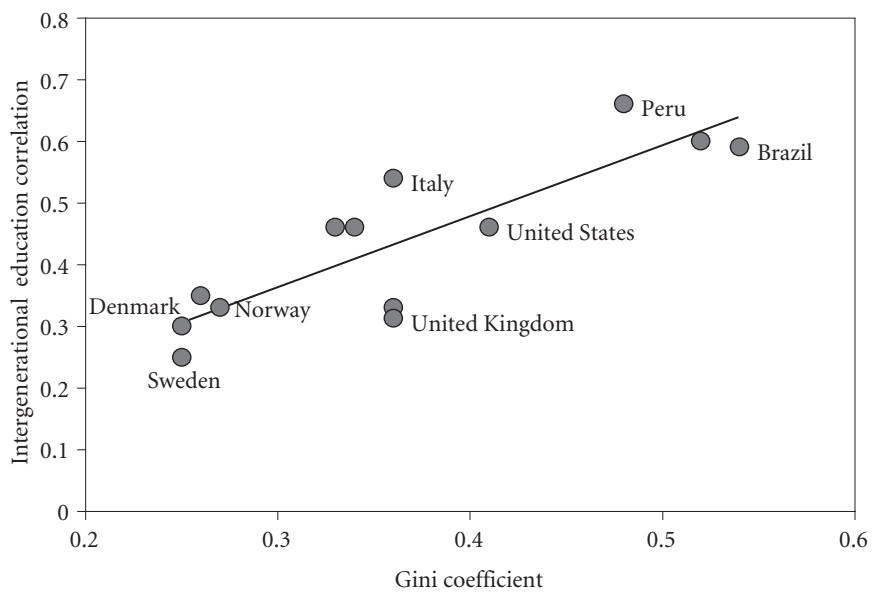


FIGURE 1.4. Intergenerational education correlation and income inequality.

same pattern for years of schooling, with implied intergenerational correlations ranging from 0.3 to 0.65. Only 9 percent to 40 percent of the variation in years of schooling is explained by inheritance. Regression to the mean appears very strong, and human societies seemingly display a high degree of entropy in their social structure.

If all the factors that determine people's life chances are summarized by their parents' status, then these persistence rates imply that all initial advantages and disadvantages for families should be wiped out within three to five generations. In this case the correlation in any measure of social status, such as income, between generations n steps apart is the intergenerational correlation raised to the power n . If the intergenerational correlation for income is 0.3, for example, then the correlation between grandparents and grandchildren is 0.3^2 , or 0.09. Between great-grandparents and great-grandchildren, it is 0.3^3 , or 0.027. Thus with intergenerational correlations in the range 0.15 to 0.65, correlations for subsequent generations quickly approach zero.

In the standard picture portrayed in figures 1.3 and 1.4, intergenerational mobility rates vary substantially across societies. They are high in the Nordic countries, which have lower income inequality. The degree of income inequality is represented by the Gini coefficient, which is zero with complete equality and one when a single person in society has everything and everyone else nothing. If much of the inequality in modern society is driven by inequality in access to capital, education, and social networks, then the good society would have a low rate of inheritance of social status and correspondingly low variations in income and wealth.

On the conventional picture of social mobility rates, the lower mobility rates observed in countries such as Britain or the United States represent a social failure. The life chances of the descendants of high- and low-status ancestors can be equalized at low social cost. The Nordic countries, after all, constitute one of the richest regions of the world, attractive in many other ways beyond the material: they enjoy high life expectancy, low crime rates, near gender equality, lack of corruption, and political transparency.

Within many societies, particular populations experience much slower rates of social mobility than others. In the United States, for example, blacks, Latinos, Native Americans, and Jewish Americans are all experiencing much slower movement upward or downward toward the mean than is predicted by the intergenerational correlation of 0.5 for income and education. This fact reinforces the idea that on conventional estimates, social mobility rates are sub-

optimal. Members of poorer minority groups, for example, seem to face greater barriers to mobility than do individuals of the majority population. Richer ethnic groups are able to entrench their social advantages through connections, networks, or access to wealth.

The association in figures 1.3 and 1.4 of greater social mobility rates in higher-income societies also suggests that one of the gains of the Industrial Revolution has been an increase in social mobility rates. The world has been on the march from a preindustrial society of great inequality, where fates were determined by the accidents of birth, to one where lineage and inheritance are of minor significance in an individual's destiny.

Again under conventional mobility estimates, genetic transmission of talent must be unimportant in the determination of social success. Nurture dominates nature. Suppose genetic inheritance matters a lot. Suppose also that mating is assortative across all societies: high-status men marry high-status women. Under these conditions, there is a lower bound to the intergenerational correlation observed in well-functioning market economies. The very low correlations observed in Nordic countries imply that the importance of families and inheritance in determining socioeconomic success must be purely a feature of the social institutions of societies.

These conclusions from conventional scholarly estimates of social mobility rates, however, sit poorly with popular perceptions of social mobility. People looking back to their own grandparents, or forward to their grandchildren, do not generally see the kind of disconnect in status that these estimates imply. People looking at their siblings or cousins see a much greater correlation in status than is implied by the intergenerational correlations reported above.

Consider, for example, the case of the English family the *Pepyses*, made famous by Samuel Pepys, 1633–1703, first secretary of the English Admiralty, member of Parliament, and noted diarist (figure 1.5). *Pepys* has always been a rare surname, flirting with extinction. In 1881 there were only thirty-seven *Pepyses* in England, and by 2002 they were down to eighteen. Seventeenth-century parish records of baptisms and marriages suggest there were only about forty *Pepyses* living at one time even then. The *Pepyses* emerged from obscurity in 1496 when one of them enrolled at Cambridge University, and they have prospered ever since. Since 1496, at least fifty-eight *Pepyses* have enrolled at Oxford or Cambridge, most recently in 1995. For an average surname of this population size, the expected number of enrollees would be two or three. Of the eighteen *Pepyses* alive in 2012, four are medical doctors. The nine *Pepyses*



FIGURE 1.5. John Hayls, *Samuel Pepys*, 1666.

who died between 2000 and 2012 have left estates with an average value of £416,000, more than five times the average estate value in England in this period. If the standard mobility estimates are correct, the chance that a family like this could maintain a high social status over seventeen generations is vanishingly small.³

Pepys is not the only rare surname to maintain a surprising presence and persistence at the upper reaches of English society. The phenomenon is remarkably common. Sir Timothy Berners-Lee, OM, KBE, FRS, FREng, FRSA, the creator of the World Wide Web, is a descendant of a family that was rich and prominent in early-nineteenth-century England. But, further, the name *Berners* is descended from a Norman grandee whose holdings are listed in the Domesday Book of 1086. Sir Peter Lytton Bazalgette, the producer of the TV show *Big Brother* and chair of the Arts Council England, is a descendant of

³The most famous *Pepys*, Samuel, did not contribute himself to this distinguished lineage, as he has no known descendants.

Louis Bazalgette, an eighteenth-century immigrant and tailor to the prince regent—the Ralph Lauren of his age—who died, leaving considerable wealth, in 1830.⁴

Alan Rusbridger, editor of the *Guardian* newspaper, that scourge of class privilege and inherited advantage, is himself the descendant of a family that achieved significant wealth and social position in Queen Victoria's time. Rusbridger's great-great-grandfather was land steward to His Grace the Duke of Richmond. The value of his personal estate at his death in 1850 was £12,000, a considerable sum at a time when four of every five people died with an estate worth less than £5.

Using surnames to track the rich and poor through many generations in various societies—England, the United States, Sweden, India, Japan, Korea, China, Taiwan, and Chile—this book argues that our commonsense intuition of a much slower rate of intergenerational mobility is correct. Surnames turn out to be a surprisingly powerful instrument for measuring social mobility.⁵ And they reveal that there is a clear, striking, and consistent social physics of intergenerational mobility that is not reflected in most modern studies of the topic.

The problem is not with the studies and estimates themselves. What they measure, they measure correctly. The problem arises when we try to use these estimates of mobility rates for individual characteristics to predict what happens over long periods to the general social status of families. Families turn out to have a general social competence or ability that underlies partial measures of status such as income, education, and occupation. These partial measures are linked to this underlying, not directly observed, social competence only with substantial random components. The randomness with which underlying status produces particular observed aspects of status creates the illusion of rapid social mobility using conventional measures.

Underlying or overall social mobility rates are much lower than those typically estimated by sociologists or economists. The intergenerational correlation

⁴ Ironically, given *Big Brother's* reputation, Sir Peter is also the descendant of Louis's son Sir Joseph Bazalgette, the nineteenth-century designer of the London sewer system.

⁵ Given the power of the results shown in this book, it is surprising that the systematic use of surnames to trace social mobility has been so little used in the past. The only author to pursue this line of inquiry was Nathaniel Weyl, whose *Geography of American Achievement* (1989) uses surnames to measure the status of groups of different ethnic origin. Weyl was a racist and was seeking by these means to show the presumed permanent superiority of those of Jewish and northern European descent.

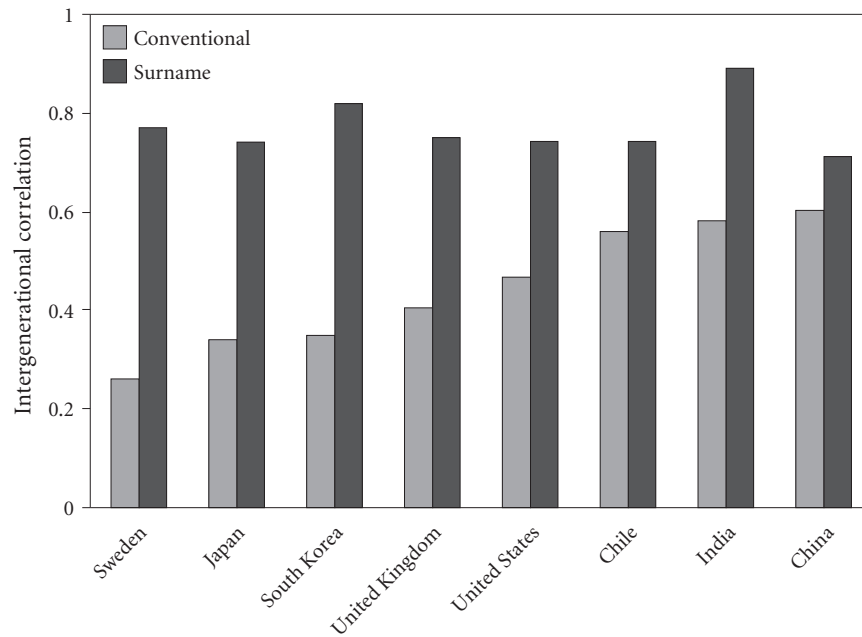


FIGURE 1.6. Conventional versus surname estimates of status persistence.

in all the societies for which we construct surname estimates—medieval England, modern England, the United States, India, Japan, Korea, China, Taiwan, Chile, and even egalitarian Sweden—is between 0.7 and 0.9, much higher than conventionally estimated. Social status is inherited as strongly as any biological trait, such as height. Figure 1.6 compares conventional estimates of mobility (for income and years of education) with those yielded by surname measures.

Even though these rates of intergenerational mobility are low, they have been enough to preclude the formation of any permanent ruling and lower classes. Mobility is consistent across generations. Although it may take ten or fifteen generations, social mobility will eventually erase most echoes of initial advantage or want.

Counterintuitively, the arrival of free public education in the late nineteenth century and the reduction of nepotism in government, education, and private firms have not increased social mobility. Nor is there any sign that modern economic growth has done so. The expansion of the franchise to ever-larger groups in the nineteenth and twentieth centuries similarly has had no effect. Even the redistributive taxation introduced in the twentieth century in coun-

tries like the United States, the United Kingdom, and Sweden seemingly has had no impact. In particular, once we measure generalized social mobility, there is no sign that inequality is linked to social mobility rates. Instead social mobility seems to be a constant, independent of inequality.

Groups that seem to persist in low or high status, such as the black and the Jewish populations in the United States, are not exceptions to a general rule of high intergenerational mobility. They are experiencing the same universal rates of slow intergenerational mobility as the rest of the population. Their visibility, combined with a mistaken impression of rapid social mobility in the majority population, makes them seem like exceptions to a rule. They are instead the exemplars of the rule of low rates of social mobility.

Some groups do seem to defy the general rule of slow regression to the mean: the Brahmins of India, the Jews for much of their earlier history, and the Copts of Egypt are longstanding elites of a millennium or more. By contrast, the Gypsies or Travellers in England (now numbering as many as three hundred thousand people) have been at the bottom of the economic scale for more than four hundred years. But these cases are only apparent violations of the rule of regression to the mean: their status can be explained either by an absence of intermarriage or by selective in- and out-migration from the group.

These high estimates of underlying intergenerational correlation imply that 50 to 70 percent of the variation in general social status within any generation is predictable at conception. This assertion will be troubling to some people. If so much is predictable, is not the individual trapped inside the social system? Does this state of affairs imply that the boy from Govan might as well give up any attempt to get educated, become financially secure, or find an occupation that is challenging and satisfying?

The answer is that these data do not imply that outcomes happen to people solely because of their family background. Those who achieve high status in any society do so because of their abilities, their efforts, and their resilience in the face of obstacles and failures. Our findings do suggest, however, that we can predict strongly, based on family background, who is likely to have the compulsion to strive and the talent to prosper.

Though parents at the top of the economic ladder in any generation in pre-industrial England did not secure any lasting advantage for their progeny, there was one odd, enduring effect. Surname frequencies show that the rich were a growing share of the population in the years before 1800. Their genes, consequently, are found more widely in the English population in the nineteenth

century than would be expected. But after 1880, the process operated in reverse. Surname frequencies show that the rich families of 1880 have produced surprisingly few descendants living now. Their genes have been disappearing from the modern population until recently.

These effects are likely common in Western Europe. The different demographic correlates of social status before 1800 and after 1880 show that in the modern world, social mobility tends to be predominantly upward, whereas in the preindustrial world it was mainly downward.

Why do the results of our surname measures differ so much from those of conventional mobility studies? Current one-generation studies suffer from a key limitation. Suppose we assume that the various aspects of social status in each generation—income, wealth, education, occupation—are all linked to some fundamental social competence or status of families, with some random deviation. The random component for any aspect of status exists for two reasons. First, there is an element of luck in the status attained by individuals. People happen to choose a successful field to work in or firm to work for. They just succeed in being admitted to Harvard, as opposed to just failing. Second, people make tradeoffs between income and other aspects of status. They may choose to be philosophy professors instead of finance executives. Bill Gates, for example, is a college dropout, a fact that would conventionally mark him as being of relatively low status. Yet the reason he decided to abandon his Harvard education was to further his wealth—an aspiration at which he succeeded spectacularly.

Because current studies are all measures of just one aspect of status, they overestimate overall mobility. Further, they overestimate mobility in later generations even for single aspects of mobility, such as income. They also overestimate even single aspects of mobility for social, ethnic, and religious groups such as Jews, Muslims, black Americans, and Latinos. The rate of regression to mean social status for these groups is much slower than conventional estimates would imply. So, for almost all the issues of social mobility we care about, these estimates are not useful. Further, for families that have not only low income but also low education, no capital, poor health, and a history of unemployment, the general intergenerational correlation for income greatly overstates the likely income of the next generation. Surname estimates are an appropriate tool for reevaluating these predictions.

These differences can also be explained using the biological concepts of *genotype* and *phenotype*, which were introduced to deal with very similar issues of regression to the mean in biological characteristics across generations. The

genotype is the set of genes carried by a single organism. Its phenotype comprises all of its observable characteristics, influenced by both by its genotype and its environment. Conventional studies of social mobility measure just the inheritance of particular aspects of the status phenotype. But families also have an underlying status genotype, which is inherited much more faithfully. Surname mobility estimates reflect this status genotype.⁶

Estimated through surnames, social mobility turns out to have a surprisingly simple structure. The same intergenerational correlation applies to the top and the bottom of the status distribution. Upward mobility occurs at the same rate as downward mobility. The same correlation applies to all aspects of mobility, as reflected by income, wealth, education, and longevity. And the process is indeed Markov, meaning that all the information useful to predict the status of the next generation is contained in the current generation.⁷ If b is the persistence rate over one generation, then the persistence rate over n generations is given by b^n . Indeed, this book suggests, based on these characteristics, a social law: there is a universal constant of intergenerational correlation of 0.75, from which deviations are rare and predictable.

What is the meaning and explanation of these surname results, which suggest persistent but slow social mobility? This is a much more contentious and difficult question. Studies of social mobility are plagued by a reflexive assumption that more social mobility is good. The last section of the book considers the likely sources of mobility and whether improving the rate of intergenerational mobility would indeed produce a better society.

To know whether an intergenerational correlation of 0.75 represents a social problem or the best of all possible worlds requires a theory of the source of this persistence. If it is created mainly by the social environment in which people spend their childhoods, then any society will produce a mismatch between individuals' talents and their social position. But if persistence is created mainly by an unchangeable familial inheritance of ability, we must conclude that, whatever their institutional structure, societies consistently produce matches of innate talents and social positions.

How important is genetics in determining people's education, income, occupation, wealth, health, and longevity? The data presented in this book cannot

⁶The term *status genotype* does not imply here that genes do in fact transmit status, just that the process looks similar in character to genetic transmission.

⁷Strictly speaking, the process is first-order Markov.

answer that question. We can, however, ask whether we can rule out genetics as the primary source of persistence of status across generations. A genetic explanation has a number of empirical implications that we can test with the data assembled here.

If genetics dominates, then the persistence rate should be the same at the top and at the bottom of the social hierarchy. Moreover, endogamous social groups—groups whose members do not marry outside the group—will be completely persistent in their status, high or low. Groups that are on average high or low on the social scale will not succeed or fail socially because of any distinctive culture that they adopted. Instead their success or failure will be the result purely of their positive or negative selection from a larger population. The more distinctive they are now in social status, the smaller a share they will be of the descendants of their parent population.

If genetics matters most, then the outcomes for adopted children will be largely uncorrelated with those of their adoptive parents but highly correlated with those of their biological parents. And if genetics matters, then the only factor that determines social status is one's parents. Grandparents, great-grandparents, uncles, aunts, and cousins play no role. In particular, if we can measure without bias the underlying social competence of the parents, that will predict an individual's social outcomes. If two people have parents of equivalent social competence, but in one case these parents come from a distinguished lineage, with a rich background of helpful social connections, and in the other the parents are nouveau riche, with no such networks, those differences will make no difference in the outcomes for the children.

Another implication of a genetic explanation of status persistence is that family size does not matter in determining social outcomes for children. The idea of a tradeoff between quantity and quality in family life is one of the sacred doctrines of neoclassical economics, one that lies at the heart of attempts to explain the long-delayed arrival of modern economic growth. But if genetics dominates in the transmission of status, by implication this tradeoff is insignificant or nonexistent.

By and large, social mobility has characteristics that do not rule out genetics as the dominant connection between the generations. Ascribing an important role to genetics helps to explain one puzzle of social mobility, which is the inability of ruling classes in places like England, Sweden, and the United States to defend themselves forever against downward mobility. If the main determinants of economic and social success are wealth, education, and connections,

then there is no explanation for the consistent tendency of the rich to regress to the society mean even at the slow rates we observe. We see, for example, that in the years 1880–1990, the rich in England consistently had fewer children than the poor. This should have enabled them to invest more time and resources in their children and preserve their wealth by dividing it among fewer descendants. With this behavior, why have they not persisted at the top of society, or even moved further above the mean? In contrast, in the years 1500–1800, the rich consistently had many more children than the poor, dividing their attention and wealth among many surviving offspring. Yet these very different demographic regimes had no effect on social mobility rates in England. They were the same before the Industrial Revolution as after.

Only if genetics is the main element in determining economic success, if nature trumps nurture, is there a built-in mechanism that explains the observed regression. That mechanism is the intermarriage of the children of rich and educated lineages with successful, upwardly mobile children of poor and uneducated lineages. Even though there is strong assortative mating—because this is based on the social phenotype created in part by luck—those of higher-than-average innate talent tend to mate with those of lesser ability and regress to the mean. Similarly, those of lower-than-average innate talent tend to marry unlucky offspring of higher average innate talent.

If nature does indeed dominate nurture, this has a number of implications. First, it means the world is a much fairer place than we intuit. Innate talent, not inherited privilege, is the main source of economic success. Second, it suggests that the large investment made by the upper classes in the care and raising of their children is of no avail in preventing long-run downward mobility: the wealthy Manhattan attorneys who hire coaches for their toddlers to ensure placement in elite kindergartens cannot prevent the eventual regression of their descendants to the mean. Third, government interventions to increase social mobility are unlikely to have much impact unless they affect the rate of intermarriage between levels of the social hierarchy and between ethnic groups. Fourth, emphasis on racial, ethnic, and religious differences allows persistent social stratification through the barriers they create to this intermarriage. In order for a society to increase social mobility over the long run, it must achieve the cultural homogeneity that maximizes intermarriage rates between social groups.

What is the significance of these results for parents socially ambitious for their children? The practical implication is that if you want to maximize your

children's chances, you need to pay attention not to the social phenotype of your marriage partner but instead to his or her status genotype. That genotype is indicated by the social group your potential partner belongs to, as well as the social phenotype of their siblings, parents, grandparents, cousins, and so on to the n th degree of relatedness. Once you have selected your mate, your work is largely done. You can safely neglect your offspring, confident that the innate talents you secured for them will shine through regardless. If, that is, the theory on the source of status persistence conjectured here is correct.

I want to emphasize that this book is not a jeremiad. Despite the low reported rates of social mobility, despite the importance of lineage in determining current outcomes, and despite our inability to significantly influence underlying rates of social mobility, this book takes cheer from the completeness of social mobility. Thus the title *The Son Also Rises*. For the evidence of the book is that social position is likely determined by innate inherited abilities. The social world is much fairer than many would expect. And the evidence is that in the end, the descendants of today's rich and poor will achieve complete equality in their expected social position. This equality may require three hundred years to come about. Yet why, in the grand scheme of societies, is three hundred years for convergence any more significant an interval than thirty years?

But an important corollary to the finding that social outcomes are the product of a lineage lottery is that we should not create social structures that magnify the rewards of a high social position. The justification for the great inequalities we observe is often that reward is the required stimulus for achievement. But we see in the various settings studied in this book, as in figure 1.6, no correlation between inequality and underlying rates of social mobility. If social position is largely a product of the blind inheritance of talent, combined with a dose of pure chance, why would we want to multiply the rewards to the lottery winners? Nordic societies seem to offer a good model of how to minimize the disparities in life outcomes stemming from inherited social position without major economic costs.

It should also be emphasized that the concentration in the book on the patrilineal line of inheritance, which is only one of many lines of descent once we look across many generations, is driven purely by the fact that in the societies studied here, surnames until recently were overwhelmingly inherited from fathers. It does not reflect any belief that women are unimportant: it merely results from the fact that until the last few generations, women's status largely reflected that of their husbands. But there is no indication that were we to mea-

sure status persistence rates through the matrilineal line, we would observe more mobility. In the modest number of cases where we observe, for example, the correlation between fathers and sons-in-law, it is just as high as between fathers and sons.⁸ It is notable, however, that the emancipation of women in recent generations has had no influence on social mobility rates. Emancipated women mate as assortatively as before and transmit their status to children as faithfully as in the patriarchal societies of the past.

⁸ See, for example, Olivetti and Paserman 2013.