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The Impact of Inequality on Intergenerational Mobility

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Abstract

The extent and causes of trends and cross-national variation in social class and occupational status mobility have been major topics of sociological research for decades. This topic has acquired renewed salience as inequality in many industrialized countries has increased and as improvements in data and estimation methods have stimulated increased scrutiny of intergenerational earnings or income mobility as well. The more recent focus on earnings or income mobility largely comes from economists, though sociologists and interdisciplinary teams have made increasingly important contributions. Compelling evidence supports the hypothesis that inequality trends are generating trends in absolute earnings mobility. Evidence about the impact of inequality on relative mobility is less clear, partly because within-country relative mobility trends are weak, partly because between-country differences in relative mobility likely have multiple causes, and partly because the rough stability in relative mobility could arise from offsetting forces. Efforts to exploit local variation in inequality and mobility have added important insights, as have studies that focus attention on mechanisms. The question of how inequality affects mobility cannot be answered definitively without a solid understanding of the multiple pathways that link a country's economic and institutional structure to its pattern of social mobility.

1. INTRODUCTION

Inequality and social mobility are tightly connected in recent public discourse. Opportunity for upward mobility is a central value in the United States and has been viewed by most Americans as a central reality as well; the American dream is popularly thought by many Americans to differentiate their country from other countries. A slowing growth of middle-class incomes has challenged that perception and has raised the question—especially on the political left—of whether rising inequality is causing rates of intergenerational mobility to fall. Conservative opinion, in contrast, typically sees inequality as just deserts in a world where people are unequal in ability and ambition (Mankiw 2013) and views the processes that produce inequality as responsible for economic growth. Sociologists have pondered the specific question of whether inequality and mobility are linked for a few decades (e.g., DiPrete & McManus 1996, Hout 2004), but the broader question of whether social mobility varies over time and across countries is long-standing in sociology, and indeed was the question that motivated the formation of the first research committee of the International Sociological Association in 1950 (Ganzeboom et al. 1991).

Before inequality had begun its "great U-turn" from downwards to upwards (Alderson & Nielsen 2002), Treiman (1970) argued that stratification systems consist of both structure and process, that "structure" includes "*the shape of the distribution* of [socially valued and scarce] resources[1] in a population" [italics his] and that "process" includes "the principles or rules by which individuals are distributed over locations in the stratification structure" (Treiman 1970, p. 207) including the rate of intergenerational mobility. Treiman (1970, p. 208) further argued that "both aspects of stratification systems are intimately interrelated: changes in *structure* necessarily imply changes in *process*, and vice versa." He accepted the evidence from Fox & Miller (1966), Lenski (1966), and Kuznets (1955) that industrialization would reduce inequality by shifting a large proportion of the population out of low-productivity agriculture and by raising agricultural productivity. Treiman was agnostic about whether the supply of highly educated workers would outstrip demand and thereby reduce the returns to education, or whether demand would outstrip supply and increase the returns to education. Nonetheless, he expected that other forces connected with industrialization—especially urbanization and the strengthening of universalistic achievement criteria—would push mobility rates upward even if supply-demand imbalances pushed up the wage returns to education. Featherman & Hauser (1978, p. 13) made a similar prediction about the consequences of a transition to a service economy. The general thrust of sociological theorizing was that relative mobility rates are held down by ascriptive forces, while universalistic, meritocratic, achievement-based processes—the stuff of industrialization—cause mobility rates to rise.

Mobility scholars also stressed the importance of distinguishing temporal or spatial variation in absolute mobility, which may largely arise from variation in the distribution of positions, and temporal or spatial variation in relative mobility, which is statistically independent of the origin and destination marginal distributions. Featherman et al. (1975) made the argument (later known as the FJH hypothesis, for Featherman–Jones–Hauser) that between-country or over-time differences in absolute mobility rates mainly arise from differences in the distribution of positions; relative mobility rates, in contrast, are largely the same over time and across countries.

The expectation that rising levels of education would lead to greater social mobility was given empirical support by the work of Mare (1981), who showed that the association between parental position and educational attainment declined at higher educational transitions. This fact, coupled with the rise in educational levels of the population, supported the expectation of rising mobility rates. This rise was demonstrated for the case of occupational mobility in the United States using

[1]Treiman included income, occupational status, and education as the primary such resources.

data from the General Social Survey (GSS) (Hout 1988) and for the United Kingdom, Sweden, and Germany by Breen (2010). However, the existence, size, and interpretation of the educational expansion effect is clouded by both empirical and methodological considerations. Some other country-specific studies [reported in the volume edited by Shavit & Blossfeld (1993)] found no downward trend in the effects of class of origin on educational attainment. In addition, it has been unclear whether the descriptive pattern of associations in the Mare model implies any causal process or is just a consequence of different patterns of selectivity on unobserved characteristics unrelated to family background (Cameron & Heckman 1998, Mare 1993). Meanwhile, Torche (2011) found evidence that the association between family background and earnings, conditional on educational attainment, is actually stronger for holders of graduate degrees than for BA holders, which she conjectured to arise from parental effects on college selectivity and field of study.[2] Finally, as an empirical matter, rising returns to education, which were increasingly apparent in many industrialized countries starting in the 1980s, imply a stronger association between the positions of parents and their adult children, and therefore push in the opposite direction against the combination of the Mare regularity and educational expansion. This possibility of countervailing forces on mobility rates, when coupled with the recognition that these forces might each be associated with inequality, complicates the process of identifying causal processes in the pattern of associations over time or across countries between inequality and mobility.

Meanwhile, it was evident to many researchers that political forces could also affect mobility. These forces operated in the educational system by affording greater access to higher quality education or to a higher level of education via educational expansion (e.g., Breen 2010). They also operated in the labor market, for example, by offering greater opportunity to people from a working class background in state socialist societies (Connor 1983) or by instituting policies to provide equal employment opportunity to minorities and women (DiPrete 1987). DiPrete & Grusky (1990) and Grusky & DiPrete (1990) recognized that changes in the political environment or in the relative supply and demand for skilled workers had the potential to reduce as well as enhance mobility rates, but they found no evidence of a downturn in mobility at the time of their analysis.

Indeed, as an empirical matter, sociologists found in trend analyses using the status attainment model (where the coefficients are generally sensitive to changes in marginal distributions) that occupational status returns to education were generally rising over time, while returns to father's status were declining (Featherman & Hauser 1978, Grusky & DiPrete 1990). In their comparative study of social class mobility, Erikson & Goldthorpe (1992) found considerable stability in relative mobility over time. Comparative analyses of survey data over the longest period of the twentieth century for which there were data (149 mobility tables for 35 countries collected from the 1960s through the mid-1980s, which includes fathers born between the 1860s and the 1960s) found that rates of relative mobility of occupational class or status were either stable or rising across the multiple countries in their study (Ganzeboom et al. 1989).[3] To reemphasize, these mobility studies did not focus specifically on the effects of inequality; inequality was only one component

[2]Torche (2018) finds only a modest or zero association for PhD holders.

[3]In an historical analysis with an even longer time frame, Long & Ferrie (2013) argued that social mobility rates in the United States were greater than those in Britain in the 1880s, that mobility declined in the United States over the next 90 years, and that the countries had similar rates of mobility in the 1970s. Some of their conclusions were challenged or reinterpreted by Hout & Guest (2013) and Xie & Killewald (2013). Most recently, Song et al. (2020) found considerable decline in relative (rank-rank) intergenerational mobility since 1850, which is mostly a consequence of the decline in the proportion of the American labor force in farming. Excluding farmers and aside from some transitory fluctuations, Song et al. (2020) found largely stable rates of relative mobility in the United States over the past 150 years.

of the technological, economic, sociocultural, and political forces that were viewed as the potential drivers of absolute and relative mobility trends.

Ironically, despite the multi-decade intensive focus within sociology on social stratification and social mobility, research on earnings and income inequality, earnings and income mobility, and the potential connections between them largely took off in the discipline of economics before attracting increased attention by sociologists.[4] Because of the salience of the recent contributions by economists, it is not informative to provide a review of the literature that focuses purely on contributions by sociologists, not only because of the importance of the work in economics but because the research by economists is influenced by earlier sociological research and has influenced recent and ongoing work in sociology. Earnings and income mobility are the subject of several high-quality reviews, for example, those of Bradbury & Triest (2016b), Torche (2015), Corak (2013a), and Jäntti & Jenkins (2015). These reviews, however, do not take the potential connection between societal inequality and intergenerational mobility as their specific focus. Literature in this area has grown so fast that even recently published reviews are dated.

2. THEORETICAL FRAMES

Theories of how inequality might affect intergenerational mobility typically make one or more of the following arguments: (*a*) Inequality affects the distribution of family resources, (*b*) inequality affects the distribution of resources in the local environment and how people are sorted in these environments, and (*c*) inequality affects the strength of the effects of family and local environmental resources on child, adolescent, and early adult outcomes, which in turn affect adult position in the stratification order. Family resources include financial capital, human capital, and cultural resources, as well as demographic characteristics (e.g., the presence of a father in the household) that potentially affect the social mobility of children (McLanahan 2004, McLanahan et al. 2013, Bloome 2017).[5]

Environmental change can obviously stimulate absolute mobility by changing the distribution of occupations between generations or by changing the mean or the shape of the real earnings or income distribution. It is also straightforward to see how rising inequality could affect relative mobility. Consider a world with two classes, which we call high ($H_i = 1$) and low ($H_i = 0$), where i signifies an individual. Assume that the probability of an adult child in the next generation being in the high class is a function of the class of family during childhood, and that the reason for the advantage is the greater resources of the high class family. Let X_i be resources:

$$X_i = \alpha + \beta_t H_i + \epsilon_i,$$

where α and β_t are coefficients, β_t has subscript t because the resource gap between classes might change over time, and ϵ_i contains all the other factors affecting X_i for individual i. We then conjecture that the probability of growing up in the high class (p_i) is a simple function of parental resources, i.e.,

$$log\left(\frac{p_i}{1-p_i}\right) = \gamma_0 + \gamma_1 X_i = \gamma_0 + \gamma_1(\alpha + \beta_t H_i + \epsilon_i) = \gamma_0 + \alpha\gamma_1 + \beta_t\gamma_1 H_i + \gamma_1\epsilon_i,$$

[4] See Becker & Tomes (1979) for an explanation of the relative disinterest in social mobility by economists as of the late 1970s. See Morris & Western (1999) and DiPrete (2007) for discussions about why sociology was so delayed relative to economics in its attention to growing inequality.

[5] Changes in the distribution of family structure could be a cause of inequality as well as a consequence (Bloome 2014).

where we assume that the error term is distributed the same for low and high class individuals. In this simple model, the odds ratio of ending up in the high class for children of high class parents relative to children of low class parents is expressible as

$$\frac{\frac{p_h}{1-p_h}}{\frac{p_l}{1-p_l}} = e^{\gamma_1 \beta_t}.$$

If rising inequality causes the resource advantage of the high class to grow, then β_t will trend upwards, and intergenerational persistence will rise.

Becker & Tomes (1979, 1986) developed a model of intergenerational earnings/income persistence based on a model of human capital investment by parents. Solon (2004) extended their model to show how mobility could decrease when returns to education rise and increase when public investment in education is more progressive. In other words, Solon's model, like a large literature in sociology extending from before Treiman (1970) to Erikson & Goldthorpe (1992) and beyond, asserts a connection between environmental conditions and the rate of mobility. Relatively simple formal models that link mobility to parental investment and to conditions in the local environment were both recently extended by Becker et al. (2018) and Durlauf & Seshadri (2018). They are useful to review because they clarify the basic technical issues and borrow in obvious ways from the sociological literature.

Durlauf & Seshadri (2018) specified child adult income as a function of parents' income in the following form:

$$Y_{io} = \alpha + \beta_i Y_{ip} + \epsilon_{io}, \qquad 1.$$

where Y is the log of income, p is for parent, and o is for offspring. The basic point of Durlauf & Seshadri (2018) is that if the coefficient of Y_{ip} is a constant, as was commonly at least implicitly assumed to be true in early models (i.e., if $\beta_i = \beta$), then, a fortiori, changes in the variance of income do not affect the assumed constant β. If, however, the effect of parental income varies across families, then the forces that cause β to differ would, perforce, affect mobility, and these forces can themselves be a function of inequality. Durlauf & Seshadri (2018) specified β as

$$\beta_i = f(X_i),$$

where X_i are characteristics of the family of origin. Becker et al. (2018) argued that Y_{io} is mainly (though not only) a function of the human capital of children, that child human capital depends on parental investment in children as well as on parental human capital and child ability, and (importantly) that there is a complementarity between parental human capital and parental investment. Complementarity in this context means that the value of parental investments increases with parental human capital. Becker et al. argued that higher parental human capital allows parents to make more efficient investments in their children, but complementarities exist for other reasons, for example, if children growing up in more highly resourced environments obtain a greater return on parental investments through interaction with their more advantaged peers, or if they also have higher aspirations stemming in part from their wanting to emulate the success of their parents, or for other such reasons. Complementarity implies a nonlinear relationship between parent and child positions and allows for an overall intergenerational elasticity (IGE) that possibly rises with rising inequality.

The substantive model of Durlauf & Seshadri (2018) employs a social mechanism that is widely employed in the literature on neighborhood effects (e.g., Wodtke et al. 2016). In principle, school and neighborhood resources could either offset the effects of family inequality or enhance (and mediate) these effects. The offset would occur if schools provided opportunities for disadvantaged

children that counteracted disadvantages at home. The enhancement would occur if schools and neighborhoods are unequal and if access to these unequal neighborhoods and schools depends on family resources. In this situation, school and neighborhood quality function as both a mechanism by which family resources have their effect and a complement to family resources; they potentially increase the value of other types of family investments in their children.

The social insurance and regulatory policies of welfare states were intended to increase the opportunity for upward mobility by low-income individuals as well as to reduce poverty and inequality (Esping-Andersen 1990, Erikson & Goldthorpe 1992, DiPrete 2002, Mayer 2005, Hout & DiPrete 2006, Marx et al. 2015). The 1960s War on Poverty programs were similarly intended to enhance mobility for the children of low-income parents (Bailey & Danziger 2013). The presumed impact of state policies to further opportunity and meritocracy was a central component of the theory of industrialism (Treiman 1970). The possibility that state interventions could affect status outcomes by reducing discrimination and promoting affirmative action was explicitly modeled in DiPrete and Grusky's fourth generation model for occupational attainment (DiPrete & Grusky 1990; see also Treiman & Ganzeboom 2000). These pathways create a link between inequality and mobility to the extent that a country's political orientation and social policies are connected to the political power of conservative or liberal actors. The decline of inequality in the first two-thirds of the twentieth century in the United States and Europe was in part a consequence of more liberal social policies that themselves may have been a consequence of declining inequality (Piketty 2014). More recently, if rising income shares in the top 1% lead to a more conservative government—which would be consistent with the policy leanings of wealthy Americans (Page et al. 2013)—and if a more conservative government reduces compensatory spending on schools and other social welfare policies, the quality and ability of these services to compensate for unequal family resources would decline. The consequence, arguably, would be a rising correlation between family resources and educational attainment and a decline in social mobility.

Parental resources include genetic endowments. These endowments are correlated with parental human capital and financial resources, are inherited by children, and therefore affect the rate of mobility through multiple pathways including educational attainment (Lee et al. 2018). These direct genetic pathways are not enhanced by rising inequality. However, indirect pathways from parental genotype to children's achievement also occur via the effect of parental genotype on the child's environment (Koellinger & Harden 2018), and these pathways could certainly be affected by a country's level of inequality.

3. MEASUREMENT AND CONCEPTUAL ISSUES

The measurement of both inequality and social mobility is complicated, and differences in findings often stem from data or methodological issues. Given space constraints, this article does not go into these issues in depth (see Torche 2015 or Jäntti & Jenkins 2015 for in-depth discussions). Our primary focus is on mobility in terms of earnings/income or occupational status/social class, and on inequality in terms of earnings or income. There are, of course, other types of inequality and other types of mobility, and inequality on a different dimension, e.g., wealth (Pfeffer 2018), or the capital-labor split of national income (Lin & Tomaskovic-Devey 2013) could well have a causal impact on social mobility. In particular, wealth differs from unearned income in that a large component of wealth is directly inherited, which implies that inequality of wealth perpetuates itself across generations more or less depending upon the extent of inheritance taxes at the time of death (Piketty 2014). The inheritance of wealth also implies a direct connection between inequality and income mobility since top incomes typically consist of unearned as well as earned income, and unearned income is a direct function of wealth.

The measurement of mobility also poses many challenges. The data used for measurement may be administrative or self- and other-reports from surveys. If direct data about parental earnings/income are not available, scholars will typically impute it using some type of instrumental variable procedure (Jäntti & Jenkins 2015). Analyses using point-in-time measures of earnings/income overstate mobility (attenuation bias), which is why scholars now average across multiple years. The measurement of mobility is sensitive to the ages of parents and adult children at which the measurement is done (life cycle bias). Studies of intergenerational earnings/income mobility have mostly measured parental position with the earnings of the father; the results may be sensitive to whether the parental measure is for the father only or for both parents, but the intergenerational evidence is too thin to draw strong conclusions. Persistence is generally lower for daughters' than for sons' earnings, though analyses of family income mobility give similar results for sons and daughters (see Torche 2015, Jäntti & Jenkins 2015, for further details.)

Mobility analyses based on social class generally use the unidiff model, which applies some version of a core model over time or across countries and then estimates a single parameter that inflates or deflates the size of the association parameter (Erikson & Goldthorpe 1992, Xie 1992). Mobility of occupational status is measured with regression coefficients; the most recent result as of this writing uses median regression and measures of parental occupational status that combine information from mothers and fathers (Hout 2018).

Studies of earnings and income mobility mainly use IGE (i.e., the regression coefficient in a regression of child's log earnings on father's log earnings) as the measure of generational persistence. As several scholars have noted (e.g., Goldthorpe 2013), the IGE is not a pure measure of relative mobility; it is sensitive to changes in the shape of the earnings distribution for children relative to their parents as well as to the correlation between the earnings of parents and children. The intergenerational correlation (IGC) measures positional mobility, and as an empirical matter, it can remain roughly constant even as the IGE increases (Aaronson & Mazumder 2008). A number of studies also use the correlation of earnings/income rank as the measure of mobility to avoid the problem of how to score individuals or family units with zero income. Mitnik et al. (2015) and Mitnik (2018) advocate the use of an expected intergenerational elasticity [IGE(w)] to overcome this problem. These methodological decisions can have important implications for the answer, as demonstrated by the lower levels of mobility obtained by Mitnik et al. (2015) and Mazumder (2016) than by Chetty et al. (2014b) using different data (administrative versus survey data) and methods [the IGE versus the IGC versus the IGE(w) versus the rank-rank slope], estimating mobility at different ages of parents and adult children, or averaging earnings/income over longer or shorter periods of time. To add to the complexity, studies have found that the amount of intergenerational persistence varies with quantile rank. This variation itself appears to vary by country, with mobility rates from the bottom of the income distribution being relatively high in the Nordic countries—though not in the United States, where scholars continue to disagree about the shape of nonlinearity, partly because of differences in measures and methods (Bratsberg et al. 2007, Mitnik et al. 2015, Bloome 2017, Chen et al. 2017, Hout 2018).[6]

Four types of evidence have been used to evaluate the likelihood of a causal relationship between inequality and intergenerational mobility. The first involves correlations between the level of inequality and the rate of mobility across countries. The second involves correlations between inequality and mobility in the same country over time. The third involves correlations between inequality and the variables thought to be mechanisms that produce a connection between the position of parents and the position of their adult children. The fourth involves natural experiments

[6]Gangl (2005) found a similar pattern of country differences in the variation of mobility rates across income ranks for the case of career mobility, which is a component of intergenerational mobility.

that point to a connection between inequality and social mobility. We next consider what these different types of evidence tell us about the effect of inequality on intergenerational mobility.

4. CROSS-NATIONAL EVIDENCE ON WHETHER INEQUALITY AFFECTS MOBILITY

A correlation between inequality and mobility across countries could be caused by national characteristics other than inequality that are associated with (including as causes of) a country's level of inequality. Nonetheless, the evocative Great Gatsby curve, which shows that countries with higher levels of inequality generally have lower levels of earnings mobility (D'Addio 2007, Andrews & Leigh 2009, Blanden 2013, Corak 2013b), is for many the most obvious evidence that higher inequality dampens rates of relative mobility. Cross-country comparisons sometimes have involved meta-analysis of the IGE or IGC in a number of country-specific studies after various methodological adjustments to make the results more comparable (see also Corak 2006). Other studies have analyzed multi-country data that were designed to be as comparable as possible, for example, the analysis of the 1999 International Social Science Program data by Andrews & Leigh (2009). Jerrim & Macmillan (2015) found a similar relationship in the Organisation for Economic Cooperation and Development Survey of Adult Skills data using parental education as the measure of parental position and a broader set of countries. However, the evidence for the association found in these studies is not definitive for many reasons: (*a*) Considerable uncertainty exists about the level of earnings/income mobility in many countries for both data quality and methodological reasons (Björklund & Jäntti 2009, Jäntti & Jenkins 2015). (*b*) Changes in inequality across generations induce an association between inequality and mobility as measured by the often-used IGE; when the IGC or mobility of income ranks is used as the measure of mobility, the relationship between inequality and mobility that is seen in the Great Gatsby curve is more modest (Chauvel & Hartung 2016). (*c*) Mobility in these studies is typically measured with before-tax/transfer income, while inequality is measured with after-tax/transfer income (Setzler 2014); when inequality is measured before taxes and transfers, the relationship between inequality and mobility is more modest. It is also worthy of note that most evidence for the Great Gatsby curve involves father-to-son mobility; studies of parents-to-son or father/mother/parents-to-daughter mobility are rarer.

Digging more deeply into the interpretation of the association shown in the Great Gatsby curve naturally points to the question of how parental position relates to educational attainment, given that education is a central mechanism by which mobility or persistence occurs. Jerrim & Macmillan (2015) found that country-level inequality correlates positively with both the university graduation gap between high- and low-educated parents and the years of schooling gap. Similarly, the returns to education correlate with country-level inequality. These results suggest that more highly educated parents are better able to convert their advantages into higher education for their children in more unequal countries.

Ermisch et al. (2012a) provide additional evidence that country-level inequality is associated with mobility-reducing processes that operate through education. They found that socioeconomic gradients in cognitive achievement, educational achievement, and health outcomes are higher in the United States than in Canada or a set of European countries. Ermisch et al. (2012b) suggest that the higher inequality in the United States is negatively affecting intergenerational income mobility.

This story, however, is challenged by the results of Gregg et al. (2017a), who, in comparing the mobility from fathers to sons in the United States, the United Kingdom, and Sweden, found that a relatively small proportion of the country differences in the IGE or the IGC involve either the parent to educational attainment effect or country differences in the wage returns to education. Most

of the difference stems from parent-to-adult-child income mobility not flowing through educational attainment. This could imply that parental resources are more useful for gaining privileged positions, net of educational credentials, in more unequal countries. It could instead mean that parental resources flow through aspects of education not measured by years of schooling, such as field of study, quality of university, or the greater social capital acquired in more highly selective colleges and universities, and that these secondary characteristics of educational attainment are more valuable in more unequal countries. Khan (2011) and Stevens (2007) highlight this process for access to elite education, while Rivera (2015) highlights this process for access to elite jobs in prestigious professional services companies. A third possible explanation is that regulatory features of the Swedish educational system and labor market reduce the potential impact of unequal credential and social capital processes (net of educational attainment) from having as large an effect on labor market earnings in Sweden as in the United Kingdom or the United States. This would be another example of how a Great Gatsby–type pattern arises from broader institutional differences among countries than simply their level of earnings inequality. It could simply be data limitations that prevented Gregg et al. (2017a) from finding a pathway through education that accounted for the higher IGE or IGC in the United States or the United Kingdom than in Sweden. In this context, it should also be noted that Björklund et al. (2012) found that most of the difference between intergenerational mobility in Sweden and the United Kingdom stemmed from the lower returns to education in Sweden than in the United Kingdom.

Cross-national evidence supporting a Great Gatsby curve is very modest or nonexistent when social class instead of income or earnings is used as the measure of mobility (Erikson & Goldthorpe 1992, Breen & Luijkx 2004, Blanden 2013, Torche 2015, Chauvel & Hartung 2016, Bukodi & Goldthorpe 2018). The notably different cross-national pattern for earnings/income inequality and social class mobility arises partly because there is a—perhaps surprisingly—low correlation between measures of the IGE across countries and measures of the strength of social class mobility (Blanden 2013). It also arises because the IGE is affected by changes in inequality across generations; in contrast, social class measures based on odds ratios are statistically independent of the marginal distributions. Chauvel & Hartung (2016) interpret the differing within-country results when using social class rather than income or earnings to stem partly from the inability of class measures to reflect the empirical regularity that adult children of higher-income parents generally earn more than do adult children who have achieved the same social class but whose parents were lower income.

5. OVER-TIME EVIDENCE

The second major type of evidence used in studies of the relationship between inequality and mobility is trend analyses within a single country. If mobility declines as inequality rises, a plausible explanation is that rising inequality is causing mobility to fall, though the fact that two time series are trending together does not necessarily mean that one of them is causing the other.

In fact, however, analyses of data for the United States—an industrialized country with pronounced inequality trends—have found little evidence of a trend in relative earnings or income mobility. Lee & Solon (2009) analyzed Panel Study of Income Dynamics (PSID) data and found no trend in the joint distribution (the copula) of parent and child ranks in the income distribution. Similarly, Chetty et al. (2014b) found that relative mobility rates have remained stable over time. Bloome (2015, 2018) found stability of rank-rank mobility using data from the PSID and the National Longitudinal Survey of Youth. Aaronson & Mazumder (2008) used census data that cover a longer period of time along with synthetic cohort two-sample instrumental variable methods (using state of birth as the instrumental variable for parent's income) to link generations; they found

evidence that trends in the IGE track trends in the 90:10 wage ratio and also trends in the wage returns to education. However, as noted before, the IGE is sensitive to differences in inequality between the two generations. Aaronson & Mazumder (2008) found less evidence that the IGC—which is not influenced by changes in the marginal distributions over time—has been trending downward as inequality has trended upward.

British economists found evidence that mobility in the United Kingdom was declining based on their analyses of the strength of association between family income when the child was 16 and individual earnings when the child was about age 30 in the British birth cohort studies of 1958 and 1970 (Blanden et al. 2004). These results were challenged (Erikson & Goldthorpe 2010, Goldthorpe 2013) on the grounds that the family income measure for the 1958 cohort is noisier, which makes it appear that mobility from family income to adult child's earnings in the earlier cohort is greater. More recent research has confirmed that the measures produced by Blanden et al. (2004) did understate economic persistence in the United Kingdom, but these new results similarly show declining income mobility in the United Kingdom (Gregg et al. 2017b).

It is, of course, possible that relative income mobility was declining in the United Kingdom while remaining stable in the United States, but why would this be true given the strong inequality trend in the United States? One possible reason is that the consequences of a causal effect of inequality on relative mobility are masked by countervailing trends. Bloome et al. (2018) compared income mobility from parents (when children were teenagers) to adult children aged 27–32 for cohorts aged 14–22 in 1979 with cohorts aged 12–18 in 1997. She found that the growing effect of parental income on child education (i.e., growing educational inequality) over time in the United States is offset by the mobility-enhancing effects of educational expansion. It is also offset by a declining direct effect of parental resources on adult child earnings, net of child's educational attainment. Bloome conjectures that this decline may be due to changes in the labor market that have made work more precarious and incomes more variable from year to year (though Chauvel et al. 2019 and Kopczuk et al. 2010 find stability in transitory earnings in the United States in recent decades). Mitnik et al. (2016) made a similar argument concerning the possibility of offsetting effects coming from the mobility-enhancing effects of educational expansion. These arguments should be contrasted against the work of Gregg et al. (2017a), who reported that the direct effect of parental income on child's income was large in the United States and the United Kingdom relative to Sweden, and this third component was the main reason why the IGE or IGC was relatively low in Sweden. It is, of course, perfectly possible for the direct effect of parents on children (which, as noted before, could arise for disparate reasons) to be relatively large in the United States and also declining.[7]

Trend analyses of status or social class mobility provide either a similar or a slightly more optimistic story about social mobility. Studies in the United States based on the status attainment model found rising status mobility before 1972 (Featherman & Hauser 1978). Hout (2018) analyzed occupational status persistence in the United States with GSS data using median regression without other controls. His findings for the 1970s to 1980s period, like those of Grusky & DiPrete (1990), showed no significant trends in this period, and he also found no significant trends in intergenerational persistence during the period from 1994 to 2016. The story is somewhat different if measures of class mobility instead of status mobility are used. Breen & Luijkx (2004) found that relative class mobility was generally either stable or rising across 11 countries in Europe from

[7]Some of this effect is probably inheritance of either occupation or employer from the parent. Bingley et al. (2012) found that 5% of sons in Canada and Denmark work for the same employer as their father, and this effect is much stronger at the top of the paternal earnings distribution.

1970 to 2000.[8] Goldthorpe & Mills (2008) found stability in both absolute and relative mobility rates in the United Kingdom between 1972 and 2005. Mitnik et al. (2016) analyzed GSS data using a two-parent design and an approximation to the Erikson, Goldthorpe, and Portocarero social class scheme (Erikson et al. 1979) and found evidence that relative social class mobility had slightly increased and then declined over a four-decade period of time, which they interpret as potential evidence that rising income inequality was depressing rates of occupational social mobility between professional-managerial and other positions. Also, and similar to the studies of earnings and income mobility, more sophisticated methods are leading to the conclusion that intergenerational persistence is greater than was previously thought, both because of better measurement of position purged of transitory fluctuations and because of more robust measures of intergenerational persistence that take account of the skewed nature of the status and income distributions (Hout 2018). Most recently, Zhou & Xie (2019) found declining relative mobility in China as China transitioned from state socialism to a market economy and income inequality increased (Xie & Zhou 2014).

6. EVIDENCE ABOUT INEQUALITY'S EFFECT ON ABSOLUTE MOBILITY

Rates of absolute mobility and changes in these rates are driven both by the location and shape of the marginal distribution and by relative mobility within this distribution. For example, the probability of the child of a manual laborer being a manager or professional depends on both the proportion of all workers in the adult child's cohort who are managers or professionals and the probability that the children of manual workers become managerial/professional workers relative to the probability of children from other social classes achieving this status. Change over time can be driven by changes in the proportion of a cohort who are managers or professionals (structural change) or by changes in the relative probabilities of becoming a manager or professional for the children of manual workers relative to the children of other parents (relative mobility). The probability that an adult child has higher earnings than any given threshold (e.g., the earnings of his/her parents) depends on the (changing) proportion of all workers in that cohort who make more than that threshold (structural change) and the probability that the rank of the adult child is at least that high in the earnings distribution (relative mobility). Because the marginal distribution of positions is itself a measure of inequality, it is clear that changes in absolute mobility depend on changes in the shape of the outcome distribution as well as in its location (e.g., mean earnings). Changes in absolute mobility also depend on changes in relative mobility.

In an important paper, Chetty et al. (2017) found markedly declining proportions of adult children in the United States who had higher earnings at age 30 than their parents did when they were teenagers. Moreover, there is clear evidence that the relationship between declining absolute mobility levels and rising income inequality is causal when income is used as the metric. As Chetty et al. (2017) show, the high rates of absolute income mobility in the middle decades of the twentieth century were driven primarily by rising real incomes across the income distribution. The slower growth of gross domestic product (GDP) per capita in the past three decades relative to earlier years plays a role in the decline of absolute mobility, but a bigger component of this change is the growing share of income that goes to the top 1%. This redistribution of GDP growth toward the very top of the income distribution implies slower income gains in the bulk of the income distribution. Recent work has shown that income growth below the 90th percentile

[8]They also found no evidence of a relationship between inequality trends within countries and trends in relative mobility over this period of time.

has been slower than the growth of GDP per capita, and the gap gets larger at lower ranks of the American income distribution (Leonhardt 2019), where 50% of the American population had average growth rates between 1980 and 2014 of less than 1% in post–tax and transfer earnings, and 75% of the population had average pretax income growth below this amount. With such low growth rates relative to those in place at the middle of the twentieth century, it is impossible for absolute mobility rates not to have fallen.[9]

Blau & Duncan (1967), Featherman & Hauser (1978), and Erikson & Goldthorpe (1992) noted that industrialization has had powerful effects on absolute rates of intergenerational occupational and social class mobility by shifting the distribution of positions toward higher-status, more skilled positions. Breen & Luijkx (2004) found that absolute class mobility was generally rising across eleven countries in Europe from 1970 to 2000. More recently, however, Hout (2018) found declining rates of absolute status upward mobility in the United States in the 1994 to 2016 period compared with the middle decades of the twentieth century. He attributed this decline to a slowing upgrading of the occupational distribution. It is less clear that this pattern is being caused by rising inequality as opposed to other structural forces that are producing change in labor markets, including change in their level of inequality. Most recently, Song et al. (2020) found declining rates of absolute status upward mobility (measured as occupational Treiman's rank) in the United States since the 1940 birth cohort of sons; they find that rates of absolute upward and downward mobility in recent cohorts are now similar to those for sons born in the late nineteenth century.

7. EVIDENCE ABOUT PARENTAL AND ENVIRONMENTAL PATHWAYS LINKING INEQUALITY AND MOBILITY

Sociologists have uncovered substantial evidence about changes in parenting that are consistent with the hypothesis that parental investment is a pathway by which rising inequality affects rates of mobility. A large body of research demonstrates differences in parental investment in their children according to social class or income, whether the investment is measured as money or time or type of investment, for example, involvement with the school, parental participation in the child's extracurricular activities, or the use of various forms of shadow education (Kaushal et al. 2011, Potter & Roksa 2013, Altintas 2016, Park et al. 2016). Moreover, inequality in parental investment has been growing in the United States as income inequality has risen (Kornrich & Furstenberg 2013, Kornrich 2016). Theories of maximally maintained inequality (Raftery & Hout 1993), effectively maintained inequality (Lucas 2001), effectively expanding inequality (Alon 2009), concerted cultivation (Lareau 2003), or negotiated advantage (Calarco 2018) are all descriptions of adaptations to changing environmental conditions by parents with resources in order to provide advantages to their children. The shift toward more equitable parental investments in daughters and sons (Kornrich & Furstenberg 2013) is further evidence that parents adjust their parenting to changing environmental conditions, in this case involving gender (DiPrete & Buchmann 2013). Schneider et al. (2018) found persuasive evidence that family income gaps in child investment are rising both because high-income parents have more to spend and because they are specifically increasing their investments in their children (relative to other consumption choices) in response to the level of income inequality in their state of residence. Their results suggest a perception that greater investments will produce especially high returns for children when inequality is high,

[9]Bloome (2019) notes that the relationship between relative mobility and absolute mobility depends on one's place in the distribution; under current conditions, it is possible to experience upward absolute mobility along with downward relative mobility when starting near the top of the distribution, while upward absolute mobility requires upward relative mobility as well when starting near the bottom of the distribution.

and that a failure to keep up in the more competitive environment of a higher-inequality state of residence will have greater negative consequences for their children.

An important avenue of research is to investigate more deeply the mechanisms by which parents affect outcomes for their children and to establish both the extent to which higher inequality is making these parental efforts more unequal and whether it is also increasing the effects of these parental efforts. This, of course, includes the study of whether educational outcomes are becoming more unequal (Reardon et al. 2011, Burdick-Will et al. 2011, Duncan & Murnane 2016) but needs to focus on the specific mechanisms that lead to unequal educational outcomes. Ermisch et al. (2012a) provided a recent example of a rather comprehensive effort to study these effects in comparative perspective using life course data. Among the topics considered is the question of the link between childhood outcomes such as cognitive skills, noncognitive skills, and various health measures on educational attainment; the strength of parental education, income, or wealth effects on these variables; the question of when these effects emerge; and their stability over the child and adolescent life course. Also considered are the questions of whether inequality in these intermediate variables covaries with nation-level inequality, and whether the effects of parental variables on the child's intermediate outcomes vary with the size of nation-level inequality. For example, the demonstration that socioeconomic gradients in cognitive achievement, educational achievement, and health outcomes are higher in the United States than in Canada or a set of European countries (Ermisch et al. 2012b) suggests that the higher inequality in the United States is negatively affecting intergenerational income mobility. Indirect evidence about additional mechanisms is from Turney & Schneider (2016), who found that local area jumps in unemployment during the recent Great Recession in the United States predicted higher rates of partner violence even after own experience with prior unemployment was controlled. This finding suggests a plausible link between the economic environment and parenting that would create barriers to mobility for children from lower-income families.

The widely reported recent work of Chetty and associates (Chetty et al. 2014a; Chetty & Hendren 2018a,b) has provided the most comprehensive evidence that mobility rates vary substantially across geographic areas in the United States and that this variation is attributable at least in part to the characteristics of local spatial environments. Chetty et al. (2014a) used deidentified tax data to analyze the relationship between the rank of parent income and the rank of child income for 40 million adult children who were about 30 years old from 1996 to 2012. They found substantial differences in both absolute and relative mobility by census commuting zone. Relative mobility was positively correlated with absolute mobility and had especially large implications for the children from low-income families; in contrast, differences in relative mobility were fairly inconsequential for the children from high-income families. Using the same data source, Chetty & Hendren (2018a) further found that children moving to a new geographic area where mobility was higher themselves had higher mobility chances. The impact of the new area was proportional to the number of years they had lived in these areas as children. Chetty & Hendren (2018a) provide persuasive if not definitive evidence that geographic differences in social mobility are explainable in part by rates of concentrated poverty, the quality of schools, the proportion of families headed by two parents, the rate of crime, and the level of income inequality in the local region. This work joins a large and growing literature that has documented the numerous ways that neighborhoods affect the quality of life of adult residents and their children (Sampson 2012, Sharkey & Faber 2014).

Identifying the pathways by which inequality effects operate through local resources such as neighborhoods and schools is challenging. The period of rising inequality in the United States was accompanied by (even if it did not necessarily cause) growing levels of income segregation between schools and also between school districts (Reardon & Bischoff 2011, Owens et al. 2016).

Moreover, Owens (2018) demonstrated that growing income segregation has been driven by the residential mobility of high-income parents seeking good school districts for their children, and that this growing segregation contributes to larger achievement gaps by enhancing the performance of high-income white students. One might also expect that low-income neighborhoods typically have negative effects on adult attainment because they have lower-quality schools. However, a direct effort to demonstrate this pathway actually found that little of the effect of neighborhoods on academic achievement ran through the poverty concentration in the school, which has been a standard measure of school quality (Wodtke & Parbst 2017). Sharkey (2010) and Burdick-Will (2013) have produced evidence that neighborhood crime rates affect school performance via stress responses by the students. It is also clear that inequality in neighborhood conditions persists across generations (Sharkey 2008), and persistence in poor neighborhood environments across multiple generations appears to affect a student's cognitive ability (Sharkey & Elwert 2011). However, aside from the challenge of clarifying the mechanisms by which local environments affect mobility is the challenge of establishing whether inequality of neighborhood conditions and the size of these neighborhood effects are being generated by rising inequality at the national level, or whether these neighborhood factors are produced by other forces (whether technical, economic, or political) which themselves might be causes of the observable inequality trends. The answers to these questions are not easy to determine.

The environment certainly affects rates of absolute social mobility. Economic growth has generally been seen as the necessary condition for rising personal incomes, and the relatively high growth rate of the United States has been seen as one of the fundamental generators of the American dream. Indeed, this presumed link is at the center of the controversy about whether inequality reduces the opportunity for mobility. Conservative economists have argued that inequality is a natural outcome of economic growth and that efforts to control inequality would have the effect of reducing growth and thereby reducing mobility, at least when it is measured in absolute terms (Friedman 1962, Mankiw 2013). However, if the benefits of growth are unequally distributed, the opportunity for absolute mobility is diminished and could even become uncoupled from growth rates. Moreover, if inequality reduces the efficient allocation of talent by inhibiting social mobility, inequality becomes not just a corollary of economic growth but an actual inhibitor of growth in the future (Bradbury & Triest 2016a).

8. INEQUALITY-EFFECT DIFFERENCES BY GENDER, RACE/ETHNICITY, OR IMMIGRANT STATUS

Inequality by gender, race/ethnicity, or immigrant status and social mobility by gender, race/ethnicity, or immigrant status are major topics of research in sociology and other social sciences. If inequality affects rates of social mobility either overall or differentially by social class, income rank, or geographic area, it would be expected to differentially affect groups (defined by, e.g., gender, race/ethnicity, or immigrant status) whose members differ on average by social class, income rank, or location of residence. A great deal of research in sociology has, of course, investigated social and economic forces that differentially affect class, status, or income attainment across these groups. The extent to which these larger forces work through global or local forms of inequality is a question whose answer is undeveloped in the present literature. It is an important question for future research.

9. SUMMARY

A reasonable summary of comparative and trend analyses of mobility is as follows: Relative mobility rates for occupational status and class mobility stopped rising in the United States by about the

early 1970s and since then show no trend. Relative mobility rates for earnings/income mobility also show no clear trend across recent decades. Rates of absolute occupation/class mobility have fallen because of a slowing in the rate of occupational upgrading that was increasing the proportion of the workforce in high-status occupations. Rates of absolute earning/income mobility have fallen as a direct consequence of lower average rates of income growth across the bottom 90% of the income distribution. Country differences in relative social class mobility demonstrate a complex pattern. Country differences in earnings/income mobility using the IGE show a correlation with a country's Gini coefficient, but this relationship is attenuated when margin-free measures of income or earnings mobility are used.

What about these relationships is caused by inequality? The main message from the literature is that it is hard to say for sure, even though it seems rather apparent that structural forces associated with variation in mobility either include inequality, are causes of inequality, or are consequences of inequality. The most obvious connection between growing inequality and declining mobility concerns absolute earnings or income mobility. When the benefits of economic growth largely flow to the top 10% and mainly the top 1%, the lack of absolute mobility for most of the population would seem to be a direct consequence. In other words, the forces that are causing inequality to rise are, at the same time, lowering the rates of absolute mobility. Similarly, the apparent relationship between country-level inequality and country-level mobility suggests at the least that country-level institutions that hold down the level of inequality seem to also produce higher rates of relative mobility. Moreover, the research on neighborhood effects, when combined with the research of Chetty and associates (Chetty et al. 2014a; Chetty & Hendren 2018a,b), clearly implies that resources in the local environment affect mobility chances and that inequality between local environments produces greater inequality in rates of social mobility regardless of whether inequality within local environments has an important effect on local mobility rates.

These relationships do not, of course, prove that inequality affects mobility. On the one hand, if economic and technological forces are increasing the relative productivity of high-skilled workers in elite occupations along with their incomes, it is logically possible that the rising incomes at the top of the distribution have a positive effect on the rate of income growth in the lower ranks of the distribution. However, one would be rightly dubious of the empirical validity of such a claim in a country where income inequality is as extreme as it is in the United States. On the other hand, rising rates of rent-capture by elites would—according to standard models—depress economic growth just as monopolies depress growth. They might thereby depress absolute mobility and relative mobility as well. These mobility-reducing effects would be enhanced to the extent that rising resources for elites combine with their generally conservative political ideology (Page et al. 2013) to polarize national politics and interfere with tax and investment strategies that would otherwise enhance opportunity for mobility (McCarty et al. 2016). The future is cloudy, and it is not impossible that growing inequality will produce countervailing political forces that overcome its negative effects and stimulate an increase in social mobility in the future. Regardless of whether inequality is a central driver of mobility rates or a by-product of other forces that affect the structure of opportunity, it is clear that a great deal of progress has been made toward understanding the reasons for variation in mobility rates within countries, between countries, and over time. It is also clear that there remains a great deal more to learn.

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