

The persistence of persistent inequality¹

Yossi Shavit, Meir Yaish, and Eyal Bar-Haim

Education in the stratification process

Sociologists view education as the pivot in the process of social stratification in economically advanced societies. While educational attainment is largely determined by the characteristics of people's social origins, it is, in turn, an important determinant of their subsequent life chances—their occupational and economic attainments as well as their health and longevity. Education can be seen as a double-edged sword in the stratification process. On the one hand, it is an important avenue for social mobility for men and women raised in the lower social strata who can not inherit privilege. On the other hand, education contributes to the transmission of inequality between generations since it is unequally distributed between strata. Which of these factors outweighs the other depends on the extent to which educational attainment is affected by social origins. Therefore, a central empirical question in the field of social stratification and mobility is the extent to which the association between social origins and education has declined or increased over time.

Scholars studying processes of educational attainment reach somewhat different conclusions regarding change in inequality of educational opportunity (IEO) over time. Some interpret the data to suggest that IEO has been rather persistent over time while others claim that it has declined. In this chapter, we review the comparative empirical literature on stability and

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change in IEO between individuals raised in different social strata in an attempt to identify the underpinnings of disagreements in this debate.

We begin with a very brief review of theoretical arguments concerning educational stratification between social strata. This is followed by an equally brief discussion of theoretical arguments for and against the expectation that IEO would decline over time. We then review the main methodological approaches to the study of change in educational stratification: traditional OLS regressions; Mare's model of educational transitions; and log linear models of the association between people's social origins and their educational attainment. We conclude with a discussion of the effects of educational expansion on educational inequality, and of the present status of the hypothesis that inequality between strata in educational attainment persists over time.

Our review of the literature favours a weak version of the hypothesis of persistent inequality. Allowing for declining inequalities between social strata with respect to the odds of completing lower educational levels, and for declining inequalities in the middle of the twentieth century—which may be explained by period effects—inequality of educational opportunity is fairly resilient to change in most countries for which data is available. This is especially true if social origin is indicated by parental education rather than by father's class.

Why IEO between social strata?

Mass education is inherently unequal. Students are tested and graded, they are sorted into stratified tracks and curricular programs, and are labelled as more or less able. Educational systems stratify because it is in the interest of educational institutions to do so. Employers expect the educational system to sort, select and label because they rely on credentials to filter able and diligent workers (e.g. Thurow 1975, Bills 1992). Employers would not value credentials that did not convey these signals and so schools that want their credentials to carry value in the labour market are under pressure to sort and select (Rosenbaum et al. 1990). Professional organizations support selectivity in the educational system because it helps them maintain closure over their privileged positions (Collins 1979, Parkin 1979). Teachers and

administrators of educational systems favour educational selection because it enhances their own prestige and power as gatekeepers (Apple 1990).

Given that mass education is inherently unequal, the question remains: why are there prevalent differences between social strata in the educational attainment of their children? The factors which mediate intergenerational transmission of IEO between strata are now well understood and include: economic and cultural resources, significant others' influences and the availability of educated role models. Educational inequality between strata is also affected by students' track placement and the curriculum that is offered in schools. When educational systems offer distinct tracks or curricular programs, track placement—and ultimately educational attainment—can be also affected by choice.² We now briefly discuss these factors in turn.

Economic resources: Clearly, high income families can afford the costs of education and can enable their children to stay in school longer. Research also shows that family income is linked to children's cognitive development. Family income in childhood has a stronger effect on educational attainment at the secondary level than does contemporaneous family income (Duncan et al. 1998). This suggests that the effect of family income on educational attainment is mediated by developmental processes rather than simply the ability to afford the costs of schooling. As Duncan and associates point out, preschool ability sets the stage for subsequent educational achievements, and children raised in poverty are less likely to develop the cognitive skills necessary for educational success.

Cultural resources: Children who are raised by educated parents internalize at home cultural codes of the dominant culture which is prevalent in schools. This provides them with an advantage in the educational attainment process over children whose parents mainly use different cultural

² In recent years scholars cast these factors within the theoretical framework initially proposed by Boudon (1974), and distinguished between primary and secondary effects on education (cf. Erikson and Jonsson 1996; Breen and Goldthorpe 1997). Primary effects are those that affect academic performance, while secondary effects are expressed via educational choices, given academic performance. The attraction of this approach is that it attributes to agents—through their actions—some of the inequality in education. However, it is not entirely clear how each of the determinants of educational inequality listed above can be classified into either a primary or secondary effect. For example, as we note below, economic resources exercise both a primary effect on children's cognitive development, and a secondary on students' educational choices through their evaluations of the costs of educational alternatives.

codes (Bourdieu 1977). Recently, scholars (De Graaf et al. 2000) found that the main component of cultural resources that affects educational achievement is not high brow cultural codes, but rather children's exposure to reading and books, which are more prevalent in the upper strata.

Significant others' influences: Students' social origin and their scholastic performance determine how much encouragement students receive from significant others (teachers, peers, and parents) regarding their future educational and occupational aspirations. These aspirations, in turn, affect students' ultimate educational attainment (Sewell and Hauser 1975). Significant others also constitute role models for children to emulate. Students raised in the privileged strata are more often exposed to educated role models than those raised in less affluent homes by less well educated parents.

Track placement: In all educational systems students are placed in distinct tracks or curricular programs. In some cases, curricular differentiation begins early in the educational trajectory while in others it only takes place at the level of higher education. At the secondary level, the most common distinction is between the academic tracks that prepare students for higher education and those tracks that prepare them for immediate entry into the labour force. Track placement is determined largely by the students' prior achievements (and choice, see discussion in the next section). But because student achievements are correlated with their socioeconomic origins, especially with parents' educational attainment, students from less privileged strata are more likely to proceed on non-academic tracks. Track placement, in turn, affects their subsequent educational attainment and magnifies inequality between social strata in subsequent attainments (Shavit 1984, Gamoran and Mare 1989, Kerckhoff 1993).

Incentives and educational choice: Breen and Goldthorpe (1997) argue that children's educational plans are shaped by forward looking rational calculus.³ Accordingly, students and their families weigh the costs of alternative educational options (i.e. tracks and curricular programs), the benefits that may accrue, and the expected probability of success in each. Among the benefits, students and their families are said to put special emphasis on the

³ Interestingly, only after Breen and Goldthorpe recognized that temporal variations in IEO are minimal did they move to develop a rational action theory of educational choice to explain why such inequality persists. Our main concern in this chapter is to ascertain whether educational inequality in fact persists over time or has declined, as Breen et al. (2005) and others now argue.

maintenance of their class position. In other words, they desire to attain a class position commensurate with that of their parents. Although all social classes share this motivation, its implications differ. For middle class children it implies the choice of demanding and risky educational options, because other routes do not lead to high status occupations. Conversely, working class children tend to choose less demanding educational options because they suffice for the attainment of working class occupations.

Should we expect IEO to decline over time?

It is important to note at the outset that most studies of change in educational stratification do not directly measure all the factors mentioned above. More relevant to our discussion on the association between social origins and education, however, is the standard practice in this field to represent social origins by measures of parental occupational status (e.g. SEI or class) and their education. The former is assumed to register the economic circumstances of a family, including their ability to bear the expected costs associated with alternative educational options, while the latter is assumed to relate to cultural capital, scholastic aptitude and significant others' influences on educational expectations, on track placement and on educational choices. Studies that adopt this practice show that the effect of parental education on educational attainment tends to be much larger than that of the father's occupation (e.g. Hout et al. 1993, De Graaf and Ganzeboom 1993, De Graaf et al. 2000, Buchmann et al. 1993, Tsai and Chiu 1993, Treiman and Yamaguchi 1993, Szelényi and Aschaffenburg 1993), and as we shall suggest, it is also more resistant to change over time.

Having made these preliminary but necessary clarifications, we can move to present arguments for and against the hypothesis that the effects of origins—economic and cultural—on education have declined over time.

Declining economic barriers to educational attainment

Theory and earlier research suggest that the economic barriers to education have declined in the post-WW II era in economically advanced societies.

Economic development and the redistributive policies of the welfare state have improved the *economic condition* of the working class. This, in turn, reduced inequality between social classes in health and nutrition (Erikson and Jonsson 1996) which affect children's scholastic performance. It also enabled more working class families to bear the direct and indirect costs of education (Breen et al. 2005). Furthermore, the direct *costs of education* have declined over time as tuition fees have been reduced and scholarships for disadvantaged students have become increasingly available. The beneficial consequences of rising living conditions and the decline in the costs of education are hypothesized to be most pronounced in social-democratic welfare states where education has been decommodified to a greater extent than in liberal or conservative welfare regimes (Esping-Andersen 1999).

In addition, Breen et al. argue that, with the decline of farming and the transformation of the economy from production to services, education is perceived to be an important recruitment criterion for an increasing proportion of jobs. Many working class jobs now require secondary education. Therefore, working class children who seek to preserve their family class position must now attend a higher level of education than their parents. Thus, there is reason to expect declining effects on educational attainment of both family income and of fathers' class position.

Declining cultural and cognitive barriers to educational attainment?

There is scant research on change in the effects of cultural resources on educational attainment over time (cf. Guesthuizen et al. 2005). Most studies interested in this issue employ reduced form models in which parental education is a proxy for cultural resources. These studies found that the effects of parental education on educational attainment are fairly stable over time. De Graaf and Ganzeboom (1993), who found declining effects of social origins on educational attainment in the Netherlands, also found that the effects of father's education are more resistant to change than the effects of father's occupation. A similar result was reported for France by Vallet (2004), who found that whether social origins is represented by parental class or parental education, its association with highest degree attained declined over time but »the results strongly suggest that cultural ine-

qualities are more resistant to change than socioeconomic inequalities.« (p. 26). More recently, Pfeffer (2006) compared educational mobility processes in 20 industrialized nations and found persistent inequality during the 20th Century.

Models and measures of educational inequality

OLS regression models

Having discussed the main factors that comprise the educational stratification process and those which may have affected change in IEO over time, we now turn to a review of the three main models of educational attainment which sociologists use in their research. During the 1960s and 1970s most studies of educational attainment employed ordinary least square (OLS) regressions (Blau and Duncan 1967, Jencks et al. 1972, Sewell and Hauser 1975). They measured education as the number of years of schooling attended or completed by their respondents, and assumed that it is affected additively and linearly by various aspects of social origins (e.g. father's education and occupation, family size, etc.). Within the OLS model, IEO is operationalized as the effects of social origins on years of schooling. This measure is equivalent to the arithmetic *difference* between the mean quantities of education that are attained by any two social strata.

Earlier American studies using the OLS model found very little change during the first half of the twentieth century in the mean educational differences between social strata, indicated by father's occupation and father's education (e.g. Hauser and Featherman 1976). Smith and Cheung (1986) analyzed data for the Philippines and found declining effects of social origins on educational attainment. In their comparative analysis of thirteen countries, Shavit and Blossfeld (1993) found mixed results: the effect of father's education declined in five countries and was stable in eight, while the effect of father's occupation declined in three countries and remained stable or increased in ten. Only in two countries (Sweden and the Netherlands) did the effects of both variables decline over time.

Mare's model of educational transitions

In the early 1980s, Mare (1981) observed that levels of educational attainment in the United States had increased dramatically and that their dispersion declined. In view of these developments one would have expected that educational inequality between social strata declined across cohorts, but as noted above, previous American studies using OLS regression reported persistent effects of social origins on educational attainment over time. Mare realized that there are two distinct aspects to educational stratification which are often confounded: the dispersion of formal schooling in the population (i.e. the variance of educational attainment) and the degree to which some groups are allocated more education than others, *given* the degree of dispersion.

Mare developed a model of educational stratification which purports to estimate effects of social origin on educational attainment that are free of the effects of dispersion. The model views the educational attainment process as a sequence of transition points at which students either continue to the next level or drop out. At each transition point, social origins affect the log odds (logit) of continuing to the next level, given that the previous level had been attained. The parameters of the transitions model provide the researcher with measures of social selection in education that are free of the overall distribution of educational attainment, namely free of educational expansion.

In the empirical part of his paper, Mare employs both OLS regressions of educational attainment and logit regressions of educational transitions. Using both models, Mare showed that during the 20th Century the effects of social origins (social selection) on educational continuation *increased* somewhat, but that educational expansion which reduced the variance of education *attenuated* inequality in total educational attainment. On balance, the OLS effects on educational attainment declined somewhat over time. Thus, expansion can compensate for persistent social selection in education. It can reduce differences between strata in educational attainment even when social selection persists. This is an important theoretical and policy implication of Mare's analysis.

Since its publication in the early 1980s, Mare's model of educational transitions has been replicated in a large number of studies yielding both similar and different results. Several applications of the model (e.g. Shavit and Kraus 1990, Shavit and Westerbeek 1998, Jonsson 1993, De Graaf and

Ganzeboom 1993, Vallet 2004) find declining effects of social origins on the lower educational transitions, and stable or even increasing effects of social origins at higher transition points (e.g. Smith and Cheung 1986, eleven of the thirteen studies in Shavit and Bossfeld 1993, Torche 2005, Vallet 2004).

This pattern of results is consistent with Raftery and Hout's MMI (maximally maintained inequality) hypothesis which states that inequality between strata in the odds of attaining a given level of education persists unless the advantaged stratum reaches the point of saturation. Saturation is defined as the point at which all sons and daughters with advantaged origins attain the educational level under consideration. The advantaged group is typically better equipped to take advantage of any new and attractive educational opportunities, and inequalities will persist as opportunities are expanded. Only when the privileged group reach saturation at a given level of education would further expansions reduce inequality, because the privileged cannot increase their attendance rates past 100%. The effects of social origins declined at the lower levels of education because the privileged strata had reach saturation while the lower strata could still benefit from expansion. At upper levels of education neither stratum is saturated and thus expansion does not reduce inequalities

Studies employing the transitions model typically find that the effects of father's education and several other indicators of social origins decline across *transitions*. This regularity has been labelled the *waning* effects. Müller and Karle (1993) suggested that this waning effect reflects a decline with age of students' dependence on their parents. They noted that countries differ in educational survival patterns: in some countries students are selected at early transition points, where IEO is high, while in other countries attrition gradually filters out small proportions of the cohort at each transition. Interestingly, Müller and Karle find that national differences in IEO are correlated with differences among them in survival patterns. Where attrition is concentrated at early transition points it is more strongly affected by class origins than in countries where it is more evenly spread out.

It would be tempting to extend Müller and Karle's logic from the comparative to the longitudinal dimension, and to hypothesize that IEO would be reduced by expanding primary and lower secondary education. This is because in countries where IEO is relatively high at low levels of education the upper level is characterized by a relatively low level of IEO. Tempting as this hypothesis might be, it was not corroborated by empirical research.

On the contrary, educational expansion of lower levels of education resulted in an increase in inequality at subsequent levels. Rijken (1999) studied differences between countries, and change across birth cohorts, in the parameters of the educational transition model. She showed that the effect of social origins on a given educational transition is related to the cohort proportion that is eligible for the transition. She concludes that educational expansion, as indicated by increases in cohort proportions that survive a transition can enhance inequality in the subsequent level.

The causal mechanisms that produce this result as well as the cause for the waning effects phenomenon are the subject of considerable controversy in the literature on educational stratification and are discussed further in the next section.

Critiques of Mare's model

Although standard in the study of educational stratification, Mare's model has been criticized on several grounds. The most common criticism, however, concerns unmeasured heterogeneity in the model.⁴ According to this critic, both the waning effect phenomenon and the finding that social origins have persistent effects over time are artefacts of model misspecification. This point was first acknowledged by Mare himself (Mare 1981, 1993) and was later echoed by Rijken (1999), Cameron and Heckman (1998) and others. Put simply, it states that the effects of the observed variables on the odds of successive educational transitions are biased by their correlation with unobserved variables. The obvious example is the correlation between parental education and respondent's scholastic ability. In the absence of

⁴The model was criticized on two additional grounds. First, Cameron and Heckman (1998) point out that the scale of logit parameters is unidentifiable. The implication of this critique is that the coefficients are not comparable across equations, transitions and population samples. Mare accepts this critique but points out that «... in typical binary response models, the effects of the covariates on the binary response, as measured either by derivatives (when they exist) or the differences in predicted probabilities, are identified...» (Mare forthcoming). Second, Cameron and Heckman also criticized the model for its assumption of myopic rather than foresighted individuals. Sociologists would find this critic rather naïve because it implies that students (and their families) plan their educational careers well in advance and are able to realize their plans regardless of structural constraints. Lucas has convincingly countered this criticism by showing that the process of educational attainment is affected by exogenous and unexpected constraints such as failure and placement in lower tracks (2001).

controls for the latter, the effect of the former is upwardly biased. Furthermore, as the cohort is repeatedly selected on ability, only the very able students from all social backgrounds progress to higher educational levels. As a result of this selection process, the association between parental education and ability declines and the measured effect of the former wanes across transitions.

This criticism is closely related to the issue of change over time in the effects of social origins on educational transitions. As Mare himself noted (1981: fn. 5), a rise in the proportion of a cohort exposed to the risk of successive transitions (i.e. educational expansion), increases the heterogeneity of the risk set and the correlation between observed and unobserved variables. In other words, with educational expansion the apparent bias due to unmeasured heterogeneity increases IEO *across time* at each transition point.

In an often ignored paper, Mare (1993) sought to assess the magnitude of the bias in the net effect of father's education that is due to unmeasured heterogeneity of family factors. He employs brothers' educational attainment as a proxy for all family factors that might affect respondents' educational attainment and shows that controlling for this variable accounts for some, but not all, of the waning effect of father's education. However, the net effects of father's education on educational transitions in the United States remain quite stable and even increased slightly for cohorts born 1907–1951. This pattern is very similar to the pattern found in his original analysis.

Our view is that the unmeasured heterogeneity critique is over-rated. Like all other models, the educational transition model should be viewed as a reduced form which does not specify all the intervening variables in the causal chain. Critics typically think of ability and motivation as the most important unmeasured variables that bias the measured effects of social origins. However, these variables are largely endogenous to the stratification process and mediate the effects of social origins (Sewell and Hauser 1975). Rather than an artefact of unmeasured heterogeneity, we believe that waning effects correspond to a substantive selection process: if social selection in education is stringent early-on in the transition process, schools and universities need not select on the same variable later on. For example, university access in Germany is open to most gymnasium graduates because stringent selection into gymnasium is performed early on (from 4th grade and on). By contrast, in the United States, little cognitive

selection is performed at the primary and secondary levels of education and the SAT sorts and selects students in the transition to college.

Log-linear models

Although Mare's model has been very popular in studies of educational stratification, some researchers advocate the use of log linear models for the analysis of the origin—education association and of changes therein. As Vallet (2004: 6) notes, Mare's model is useful for the study of specific educational transitions but in and of itself it is not an effective tool with which to assess the *overall* degree of association between social origins and final educational attainment. While OLS models are suited to this end, their estimates confound true association between origins and educational attainment with the effects of change in the distribution of education. Log-linear models, on the other hand, provide margin-free measures of the total origin-education association, and are becoming more popular in studies of educational stratification.

With Ishida and Ridge, Walter Müller (Ishida et al. 1995) studied the association between origins, education and class of destination in ten industrial societies. Their paper is among the first to model the origin—education association in a log-linear framework. The authors find strong origin—education associations in all countries, coupled with differences between them in the pattern of the association. Their most interesting result in this regard concerns the difference (or lack thereof) between socialist and other countries. Their data refute the hypothesis that in the former (Hungary and Poland) the association between origins and education was generally weaker than in market economies.

With Jonsson and Mills, Walter Müller (Jonsson et al. 1996) studied change in the association between social origins and gender on the one hand, and educational attainment on the other hand, for Sweden, Germany and Britain. As in the previous paper, social origins are represented by father's class alone. The authors employ data for cohorts born in 1910–1959 for Sweden, in 1916–1959 for Germany and in 1885–1959 for Britain, and use a log multiplicative model (Xie 1992) in which change in the origin-education association is scaled by a single parameter across cohorts.

For Sweden and Germany, but not for Britain, they find significant secular declining trend across cohorts in the association between class and

education. However, the decline is very small, accounting for about 6 percent of the educational upgrading during the 50 years covered by their data (p. 196). Unfortunately, the authors do not identify the specific educational barriers which declined in Sweden and Germany.

In a recent paper, Müller and his associates (Breen et al. 2005) revisit Blossfeld and Shavit's claim that IEO is persistent over time in most industrialized countries. These authors studied changes over time in the origin—education association for male residents of eight European countries. Using large data sets for Britain, Germany, France, Italy, Ireland, Britain, Sweden, Poland and the Netherlands, they fit log-multiplicative models to a table of education by class-of-origin, by country, by cohort, by year-of-survey, and find that for all but two countries (Italy and Ireland), the origin—education association declined significantly across cohorts. Importantly however, the decline was not linear. Rather, it has taken place only in the years immediately following World War II. For cohorts born since then, the authors find persistent inequality.

Six of the countries in the study were also compared by Blossfeld and Shavit (Sweden, the Netherlands, Germany, Italy, Britain, and Poland) and Breen et al.'s results contradict Blossfeld and Shavit's conclusion for three (Germany, Britain and Poland). Breen and his associates suspect that the discrepancy between the two studies is due to the small samples employed by some of the original studies which were compared by Blossfeld and Shavit. Testing this hypothesis they show that with samples of the same size as those employed in the earlier study, there is a reasonable chance to accept the hypothesis of persistent inequality for Germany, Britain, Italy and Poland, but not for the two cases in which it was also rejected by Blossfeld and Shavit (Sweden and the Netherlands).

In a detailed study of change of IEO in France, Vallet fits a series of log linear, log multiplicative and logit models to very large data sets spanning cohorts born between 1908–1972, and addresses three main questions: (i) Did the origin—education association decline over time? (ii) Did the effects of social origins decline only at early transition points or did it decline at other transition points as well? (iii) Do the results depend on the variable used to represent social origins (fathers' class or parental education)? As we noted earlier, Vallet's results show a significant (but modest) weakening of the association between origins and highest education completed. Consistent with the MMI hypothesis, Vallet's logit analysis shows that the weakening association was due fully to a decline in the effects of

social class on the conditional odds of successfully making the early educational transitions. The effects of class on later transition remained stable and even increased over time. Vallet also finds that the association between parental education and own education is more resilient to change than the association between father's class and own education. This result is extended and corroborated by Pfeffer (2006) whose log-linear analyses of the association between parental and respondents' education revealed no significant changes in the association over time in any of the 20 countries that he studied.

It is noteworthy that in France the decline in the origin—education association is also far from linear over time. It was fairly stable (or even increased somewhat) for cohorts born between 1908 and the late 1920s, declined sharply for those born between the late-1930s and the late 1940s, and declined only weakly thereafter. Vallet notes that the sharp decline was unrelated to the educational reforms of the 1950s which were intended to reduce IEO in France. A similar result is reported for Italy by Barone (2006), who found that the origin—education association under a log multiplicative model, declined for cohorts born during the 1930s and 1940s and increased thereafter. Thus, the declining inequality that was reported for European countries by Breen et al., Vallet, and Barone, occurred immediately after WW II and one wonders whether it is related to the resumption of normalcy and the implementation of the American Marshall Plan after WW II.⁵

⁵ Recently, researchers are abandoning both the transition model and log linear models of educational attainment in favour of ordinal logit regressions (e. g., Cameron and Heckman 1998, Hout forthcoming, Ballarino and Schadee 2005). Log-linear and ordered logit models alike produce measures of association between social origins and education that net out distributional effects. Furthermore, both methods model total (unconditional) educational attainment. Ordered logit models are more parsimonious than log linear models because they assume that education is an ordered variable and that the odds involving neighbouring categories are similar up to a scalar. These assumptions are questionable, especially in educational systems which are differentiated both horizontally and vertically, as most systems are (König et al. 1988).

Educational expansion and IEO

As we have seen, the effect of educational expansion on IEO is a central theme in studies of educational stratification. It is important to comprehend the role of expansion in shaping IEO because expansion is an important policy tool that governments use in attempts to reduce IEO between social strata. Yet, as we have seen, scholars working in the field are not agreed about educational expansion. Some treat it as a nuisance which must be controlled when searching for measures of *true* change in IEO. Indeed, much of the methodological acrobatics we discussed has been motivated by the desire to produce measures of IEO that are expansion-free. Other scholars (e.g. Arum et al. forthcoming, Raftery and Hout 1993, Rijken 1999) treat expansion as a theoretically important component of the stratification process and seek to understand its effects on IEO. Our review of the literature suggests the following conclusions regarding the effects of educational expansion on IEO.

Expansion and the dispersion of education: We have learned from Mare that inequality between strata in the average level of education (i.e. absolute inequality) is related to the variance of education, such that a reduction in the variance of education results in a reduction in inequality between strata in the average educational attainment. For educational expansion to reduce the variance of education it must be concentrated on the lower levels of schooling. For example, raising the level of compulsory education is an expansion of education »*from the bottom*«. Expansion from the bottom that raises the educational minimum in the population can thus reduce its variance. We define expansion from the bottom as a significant increase in cohort proportions that survive the lower educational transitions. Expansion at the top, in contrast, is defined as a significant increase in cohort proportions reaching the highest educational levels. Therefore, a rapid expansion of higher education can increase the variance of education by stretching out the right-hand tail of its distribution.

Expansion and saturation: Expansion from the bottom can also reduce *relative* inequality between strata in the odds of attaining a given level of education. Following the logic of Raftery and Hout's (1993) MMI hypothesis and given that attendance rates at lower educational levels are nearly universal among the upper strata, their further expansion stands to benefit the lower strata and reduce inequality in the odds of attaining those levels.

Expansion and carry-over effects: Declining inequality in the odds of completing lower levels of education can carry over to higher levels and reduce both relative and absolute inequality in the highest education attained. For example, in their analysis of Italian data, Shavit and Westerbeek (1998) found that inequality between strata in the odds of completing lower levels of education declined over time, while inequality in the odds of making subsequent *transitions* remained stable. However, the reduced inequality at the bottom of the educational hierarchy carried over to higher levels of education and reduced inequality in the (unconditional) odds of completing upper secondary education. Vallet (2004) finds similar results for France.

Expansion and postponed selection: Despite being able to reduce inequality between strata, in both the absolute and the relative sense, expansion from the bottom also has dis-equalizing effects. Expansion from the bottom increases not only the number of individuals at risk for subsequent educational transitions, but also the heterogeneity—in terms of social origins—of these individuals. This greater heterogeneity can then result in an increase in inequality between strata in the odds for their completion of subsequent educational transitions (Rijken 1999).

Expansion and differentiation: Educational expansion is closely related to educational differentiation. As systems expand and quantitative educational inequalities between strata diminish, they are replaced by qualitative differentiation. For example, Lucas (2001) has argued that once saturation has been reached with regard to a given level of education, inequalities in the odds of attainment may be replaced by inequalities in the odds of placement in the more selective track. Thus, while expansion may reduce quantitative inequalities in education, these may be replaced by qualitative ones.

The balance between the equalizing and dis-equalizing effects of educational expansion on IEO varies between countries and over time. In some instances, carry over effects are somewhat stronger than those of postponed selection, while in others they seem to cancel out one another. The reasons for these differences are still not well understood.

Where does persistent inequality stand?

We can now summarize the main points of agreement in the emerging consensus in the debate concerning the hypothesis of *Persistent Inequality*. In

its strong version, *persistent inequality* is probably wrong: large data sets reveal weakening effects of origins on education since the early decades of the twentieth century. But if a weaker version of this thesis is considered, then we would argue that *persistent inequality* still persists. To begin with, even those who find a reduction over time in the origin-education association estimate this reduction to be moderate. Secondly, the reduction is accompanied by a devaluation of lower credentials over time that is due to both their burgeoning supply and to technological changes in the economy. Evidence indicates that while IEO declined at the primary and lower secondary levels of education, it was not reduced in the transitions to the upper secondary or tertiary levels of education. Again, in an era of educational expansion it is the higher levels of education that count most for an individual's career success.

Thirdly, the few studies that revealed a decline in IEO over time (Vallet 2004, Breen et al. 2005) found that it occurred immediately after World War II. The results of these studies indicate, moreover, that before WWII and since then the origin—education association has been fairly persistent. Could this be an idiosyncratic period effect rather than a general pattern of change? One is tempted here to follow Sorokin's (1959) suggestion that inequality in the transmission of privilege tends to decline in periods of social upheaval such as war and revolution, but that in other periods it fluctuates constantly and persistently.

Fourthly, our review of the literature indicates that inequality between classes is substantially weaker than inequality between strata defined by parental education. This is an important pattern of results that would appear to strengthen the 'death of class' thesis (cf. Clark and Lipset 1991, Pakulski 1993). Proponents of this thesis argue that inequality in society is undergoing a process of individualization (Beck 1992, Giddens 1994), and hence class inequality, in education and otherwise, is declining.

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