

# INEQUALITY OF OPPORTUNITY IN COMPARATIVE PERSPECTIVE: Recent Research on Educational Attainment and Social Mobility

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■ **Abstract** Studies of how characteristics of the family of origin are associated with educational and labor market outcomes indicate the degree of openness of societies and have a long tradition in sociology. We review research published since 1990 into educational stratification and social (occupational or class) mobility, focusing on the importance of parental socioeconomic circumstances, and with particular emphasis on comparative studies. Large-scale data now available from many countries and several time points have led to more and better descriptions of inequality of opportunity across countries and over time. However, partly owing to problems of comparability of measurement, unambiguous conclusions about trends and ranking of countries have proven elusive. In addition, no strong evidence exists that explains intercountry differences. We conclude that the 1990s witnessed a resurgence of microlevel models, mostly of a rational choice type, that signals an increased interest in moving beyond description in stratification research.

## INTRODUCTION—DEFINING THE AREA

Research in social stratification is a very lively area within sociology, being so near the heart of the discipline itself. A common distinction within this area is between inequality of opportunity and inequality of condition. The former has its origin in the liberal goal that a person's chances to get ahead (attain an education, get a good job) should be unrelated to ascribed characteristics such as race, sex, or class (or socioeconomic) origin. The latter, inequality of condition, is concerned with the distribution of differential rewards and living conditions, either in the simple form of distributions of scarce goods or in relation to different inputs (such as effort and time) or rights (such as citizenship or employment). Of course, the distinction

between inequality of opportunity and of condition is not clear cut, but it is a useful tool for organizing a review of the literature.

In the social sciences, studies of inequality of opportunity typically are about attainments of educational qualifications and social positions (occupations, social class, etc.) and how these attainments are associated with ascribed characteristics. Studies of inequality of condition, in contrast, are concerned with income differences or differential rewards in the labor market or in the larger distributional system, including the welfare state. Our aim here is to review research relating to inequality of opportunity, and we concentrate on studies that focus on the social origin of individuals (most often indicated by parental occupational status or education). The literature on inequality based on gender, family type, and race or ethnicity is voluminous, and even though theories and methods partly overlap, there are also special features of these questions that would make a serious treatment of them exceed the space at our disposal.<sup>1</sup> We also restrict ourselves to studies since 1990 (although we reference some older studies), mostly because there are several reviews covering earlier periods.<sup>2</sup> In addition, we concentrate on studies with a comparative perspective, particularly of European nations, to contrast with those of the United States.

In the empirical study of educational inequality and social mobility—or of the occupational attainment process—there are various theories and practices regarding which concepts and classifications to use. When defining social origins and “destinations” (typically meaning current or mature social position), there are at least three commonly used frameworks: prestige scales, socioeconomic indices (SEI), and social class typologies, and within these categories is a multitude of competing alternatives. All these frameworks tend to use occupational information as their backbone, along with information on employment status (to differentiate employers from the self-employed and employees) and sometimes on sector (e.g., to distinguish farming), authority, or expertise. Most empirical studies that we review use a limited number of these indicators, primarily the class schemas devised by Erikson & Goldthorpe (1992) or Wright (1997), SEI (reviewed by Hauser & Warren 1997), or occupational prestige scales (e.g., Ganzeboom et al. 1992). Although many social mobility studies have come to apply a class perspective (using categorical data analysis), studies of the attainment process often use SEI or prestige scales, implying linear modeling such as path analysis or LISREL

<sup>1</sup>We acknowledge that there are other indicators of inequality of opportunity that we are not able to cover. One of the most important is the degree of homogamy in marriage, where the argument is that inequality prevails to the extent that spouses are homogamous in attributes such as social origin, education, or ethnicity (e.g., Blossfeld & Timm 2003, Smits et al. 1998 for comparative studies).

<sup>2</sup>For reviews, see Burton & Grusky (1992), Ganzeboom et al. (1991), Kerckhoff (1995), and Kurz & Müller (1987). Although not a proper review, Erikson & Goldthorpe (1992, chapters 1–2) provide critical comments on previous studies. There are many summaries of status attainment research, e.g., Bielby (1981) and, more recently, the 1992 symposium on Blau & Duncan’s *American Occupational Structure* (1967) in *Contemporary Sociology* (Vol. 21, No. 5), where further references can be found.

models. For the purposes of this review—to cover the literature on inequality of opportunity—we are rather agnostic about how to understand and measure social origin and destination; we also feel that most of the tools in use are sufficiently well devised to cover the main stories about the degree of inequality, the change over time, and the differences between countries. (The debate of how best to conceive of the social structure is an industry in itself: Good, critical reviews and constructive suggestions are given in, e.g., Erikson & Goldthorpe 1992, Grusky & Sorensen 1998, Sorensen 2000, and Wright 1997.)

We focus mainly on two areas: (a) the link between social origins and educational attainment, and (b) the overall association between social origins and occupational destinations. We concentrate on empirical findings that document the extent of inequality of opportunity and how it changes over time and differs between countries, as well as on theories that seek to provide explanations of such results. We limit ourselves to studies that are published or accepted for publication.

## INEQUALITY OF EDUCATIONAL ATTAINMENT

### Educational Inequality: Change Over Time and Differences Between Countries

By the beginning of the 1990s, researchers agreed that the modeling of inequality of educational attainment could not be confined to the traditional linear regression of years of education on social origin. Although a legitimate enterprise, these studies tend to conflate changes in the marginal distributions (e.g., educational expansion) with changes in the underlying association between origin and educational attainment, normally conceptualized as the best measure of inequality of opportunity; furthermore, they did not conceive of the educational career as actors did, namely as a series of transitions between levels. Therefore, researchers came to prefer logit models of transition propensities at successive levels of the educational system, revealing the “pure” association between origin characteristics and educational attainment.<sup>3</sup> This prompted a large-scale comparative project of empirical analyses directed by Shavit & Blossfeld, and brought together in the book *Persistent Inequality* (1993). It included studies of 13 industrial countries (6 Western European, 3 Eastern European, and 4 non-European, including the United States) by experts in the stratification and school systems of the particular country. Most contributors used similar background variables (fathers’ occupation/class, fathers’ education) and outcomes (years of education; transitions from primary to lower secondary, from lower to higher secondary, and from there onto degree level), and they used identical methods (OLS-regressions of years of education, binomial logit models for transitions). The country chapters assessed

<sup>3</sup>The educational transition model was used by Boalt (1947), shown to be pertinent for microlevel theory by Boudon (1974), and found its statistical rigor and popular form in the influential work of Mare (1981).

change in educational inequality via synthetic cohorts from cross-sectional surveys, a method that is not unproblematic but that is widely assumed to give a fair representation of changes over time. The project design was a huge step toward standardization in research, although several inconsistencies still remained (mostly because of problems of data comparability).

The study addressed several macro-oriented hypotheses. According to the modernization hypothesis, one would expect origin effects to decrease generally, whereas the reproduction hypothesis states that inequalities may decrease at lower transitions because of educational expansion, but that this would be compensated for by increasing effects on later transitions. The socialist transformation hypothesis assumes that there would be an initial reduction in origin effects that would be followed by increased effects as new elites pursued their interests. The most important conclusion from the study was the lack of support for any of these hypotheses, mainly because the prevailing pattern was stability in origin effects on educational transitions. According to the analyses, in only two countries—the Netherlands and Sweden—did equalization occur. However, this conclusion has been contested. Subsequent analyses have clearly shown equalization in the case of Germany (Henz & Maas 1995, Jonsson et al. 1996, Müller & Haun 1994), France (Vallet 2004), Italy (Shavit & Westerbeek 1998), and probably Norway (Lindbekk 1998), while the results for Sweden (Jonsson & Erikson 2000) and the Netherlands (Sieben et al. 2001) have been corroborated. Equalization typically has occurred at lower transition points.

Although it is likely that many countries share in a trend toward a decreasing association between social origin and educational attainment, there are some exceptions. For Ireland, Breen & Whelan (1993) and Whelan & Layte (2002) find constancy in the association, and the same seems to prevail in the United States (Hout et al. 1993, Hout & Dohan 1996, Mare 1993). Gerber & Hout (1995) find a mixed pattern for Soviet Russia, with the origin-education association declining at secondary education but strengthening in access to university. In a later paper, Gerber (2000) finds that in post-Soviet Russia the association has, if anything, increased.

Despite all the virtues of the Shavit and Blossfeld project, differences in classifications of social origin in national data sets prohibited the assessment of country differences in the degree of inequality of opportunity. Although it was possible to relate changes in educational inequality in a specific country to national macroevents (such as educational reform), it was not possible to use the multination approach for addressing the question of between-country variation in the importance of macrovariables for international differences in inequality of educational opportunity. Two other comparative studies sought to remedy this.

First, Müller & Karle (1993) fitted log-linear models to CASMIN (Comparative Analysis of Social Mobility in Industrial Nations) data from nine European countries coded into comparable measures of class origin and educational qualifications. They found that the origin-education association showed national-specific patterns (although these are not easily summarized). The relative position of the unskilled working class was most advantageous in France, Poland, and Sweden and

least so in West Germany, Ireland, and Northern Ireland. All in all, West Germany and probably the two Irelands appear to occupy a position close to the “rigid” pole, whereas Poland and probably Hungary and Sweden appear to belong at the other end. Second, Jonsson et al. (1996), using more recent data, found that the associations between class origin and educational attainment declined across cohorts in Sweden and Germany but not in England, and that inequality was clearly greatest in Germany, with Sweden being somewhat more equal than England. Because the former study used data mainly collected in the 1970s and the latter only compared three nations, there is only scattered knowledge about how different contemporary countries “rank” in terms of inequality of educational attainment (but compare footnote 9).<sup>4</sup>

### Micro-Level and Institutional Explanations of Educational Inequality

Much research shows that characteristics of the family of origin (such as parental socioeconomic status and education, cultural assets, social networks, and parental motivation) are associated with educational outcomes (e.g., de Graaf et al. 2000, Duncan & Brooks-Gunn 1997, Gamoran 2001). These resource differences have their effects both via socialization and educational choice, and one of the most significant trends in the study of inequalities in educational attainment in the past decade has been the resurgence of rational choice models focusing on educational decision making (Breen & Goldthorpe 1997; Erikson & Jonsson 1996a; Esser 1999; Morgan 1998, 2002; for earlier work of this kind, see Boudon 1974 and Gambetta 1987). In these models the choices pupils and their parents make are determined by expected benefits, costs, and probability of success for different educational alternatives. One difference between rational choice models and the standard model of educational decision making employed by economists (for example, Cameron & Heckman 1998) is that the former allow for uncertainty among students about their likelihood of succeeding at a given educational level, which introduces what might otherwise seem (to an economist) like myopia into the decision making process. A number of papers (Becker 2003, Davies et al. 2002, Need & de Jong 2001) test the model presented by Breen & Goldthorpe (1997), and their results are broadly supportive of it. Hillmert & Jacob (2003) develop and test a closely related rational choice model to explain social inequality in access to higher education in Germany.

In individual-level models of educational choice, institutional factors may affect the parameters of the model so that, for example, the perceived costs of an

<sup>4</sup>Note that the educational choices that parents make for their children are shaped by the school-to-work link. Because this link is especially strong in countries with an apprenticeship system (Shavit & Müller 1998), such as Germany, working-class parents in these countries may be primarily concerned that their children get a favorable apprenticeship placement and therefore may be less willing to risk enrolling them in higher education.

education or the probabilities of succeeding at university differ according to the organization of schooling. Erikson & Jonsson (1996b) argue that the family of origin plays a crucial role in shaping an individual's school performance and educational aspirations, and these relationships are likely to be fairly invariant over time and space. Rather, the main sources of change over time and differences between countries are variations in the costs, to the student, of secondary and higher education, and variations in the ages at which crucial educational decisions are taken (because the perceived probability of success is more strongly associated with social origin at early, rather than later, transition points). The fact that social origin is more strongly associated with educational attainment at younger ages (e.g., Breen & Jonsson 2000, Mare 1993, Shavit & Blossfeld 1993) implies that comprehensive school reform in which the earliest decision point is postponed reduces inequality of educational opportunity. There is support for this hypothesis from Sweden (Erikson 1996) and Scotland (McPherson & Willms 1987), while in Germany early selection in education is reflected in substantial inequality of attainment. More thorough tests would, however, need to draw on evidence from more countries. Another related institutional factor of potential importance is the type and extent of ability grouping or tracking: Some studies give support, though not unequivocal, for the hypothesis that the early division of pupils into different ability-related streams amplifies inequality (Gamoran 2004, Kerckhoff 1993). There has been a long discussion in the United States of the role of school resources. The most compelling result is that smaller class sizes favor disadvantaged students (Krueger 1999).<sup>5</sup>

The topic of contextual effects on educational attainment attracted growing attention during the 1990s. One important context is the school: Studies not only focus on characteristics of schools such as efficacy in instruction and resource differences, but also examine endogenous social interaction effects that influence school climate, norms, and educational aspirations (see reviews by Mortimer 1997, Sampson et al. 2002, Small & Newman 2001). Studies support the view that there are additional effects of social context on educational attainment, beyond the school, such as growing up in a poor neighborhood, thus boosting the influence of social origin (Erikson 1994, Garner & Raudenbush 1991, contributions to Brooks-Gunn et al. 1997, Mayer 2002). Studies of contextual effects are plagued with problems of endogeneity, or population sorting: Much of what looks like effects of an individual environment may be due to a selection of people with certain

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<sup>5</sup>Related issues (that we do not cover here) are those of selective schools, "efficient" schools, and school quality defined according to the composition of the student body (see below on contextual effects). Because students from different social backgrounds have different opportunities of attaining high-quality schools (however defined) and because such schools provide superior chances in the labor market, heterogeneity in school quality contributes to educational inequality. Morgan (2001) gives references and presents a critical view and additional analysis on the longstanding issue of Catholic schools. For an interesting, recent study of selective schools, see Dale & Krueger (2002).

characteristics into certain neighborhoods and schools (e.g., Manski 2000). For example, this would be the case if parents who are very motivated and best able to support their children's schooling also actively choose neighborhoods and schools where the socioeconomic context is more privileged. However, even studies that have attempted to solve the endogeneity problem have concluded that the socioeconomic environment has an impact on children's educational success (Erikson 1994, Hanushek et al. 2003, Harding 2003).<sup>6</sup> But environmental effects are probably of a rather modest magnitude: Between 80% and 90% of the variation in school achievement, for example, appears to be between families within schools or neighborhoods (Entwisle et al. 1997, Erikson 1994, Garner & Raudenbush 1991, Mortimer 1997; compare also Solon et al. (2000) for an equally low estimate comparing neighborhood and sibling resemblance in earnings).

## SOCIAL MOBILITY

### Social Fluidity in Comparative and Temporal Perspective

The traditional measure of a society's openness is the degree to which the attainment of social position is associated with social origin. For a long time, one crucial issue in mobility research was the need to separate structural effects on mobility—which are forced by changes in the social structure (as when a rapid decline of farmers leads to increased mobility out of that class)—from a more “pure” or “exchange” form of mobility. During the 1980s, the dominating research tradition turned to log-linear analysis to solve this issue, benefiting from work by Goodman (e.g., 1979) and Hauser (1978). The study of social mobility now usually distinguishes between the analysis of absolute rates of mobility as a description of flows between social origins and destinations and the analysis of relative rates (in the form of odds ratios), unraveling the net association between the two. This association, often termed social fluidity, was conceptualized as a measure of inequality of opportunity, in much the same way as the logit model of educational transitions. This interpretation is not unproblematic, given the difficulty of inferring inequality of opportunity from data on inequality of outcomes.

The methodological redirection (from OLS regression, path analysis, and the analysis of various mobility indices) allowed analysis of the social structure in

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<sup>6</sup>The strategies differ between these studies. Erikson (1994) studied the effect of socioeconomic composition in schools in areas with only one school; Hanushek et al. (2003) applied a number of fixed effects (individual, school, school-by-grade, etc.) and, in practice, compared achievement change of those who had either changed environment by moving or who had had the environment changed by changing peer composition, with “stable” pupils; and Harding (2003) used propensity score matching with sensitivity controls. Although all these methods have their problems, the conclusion that there are environmental effects, even if limited in scope, is likely robust. There are also studies using instrumental variables (such as Duncan et al. 1997), but the difficulty of finding instruments is striking.

class terms, i.e., without imposing a unidimensional hierarchical form. The main proponents of this redirection were Erikson & Goldthorpe who, in their major work *The Constant Flux* (1992), sought to portray both the absolute and relative rates of mobility using data, mainly from the late 1960s and early to mid-1970s, from 12 European countries and the United States, Australia, and Japan. They used cross-sectional data (that is, one mobility table per country), but they set new standards in comparative analysis by the rigorous recoding of occupational information in nationally representative data sets into the so-called EGP (Erikson, Goldthorpe, Portocarero) class schema, and by applying advanced and partly new log-linear modeling techniques. Their strategy was first to define a core model of fluidity, including different dimensions of the reproduction process (of which hierarchy, inheritance, and sector were the most important), as laid out in the mobility table of father's class by son's class. All nations were then compared with the core model, and their deviations from it were interpreted by what might be called historically informed macrosociology, and were also tested in a macromodel in a concluding analysis (which, however, the authors did not much emphasize).

As much as the analyses were elegant and innovative, the results and conclusions were surprising and controversial. Rejecting the liberal hypothesis of a common increase in social fluidity driven by industrialization, Erikson & Goldthorpe (1992) concluded that there were small differences between nations in their pattern and degree of fluidity—deviations that were better explained in terms of national peculiarities than in macrosociological regularities such as industrialization or modernization, and there was no or very little change in fluidity across birth cohorts. Their interpretation was that the unequal distribution of resources and power so permeates the social structure as to lead to a general and unchanging level of inequality of opportunity.

The widespread adoption of the EGP class schema greatly facilitated the most recent large-scale comparative mobility project, the results of which were published as *Social Mobility in Europe* (Breen 2004). Taking *The Constant Flux* as its starting point, the aim of this project was to look at temporal change between 1970 and 2000 and cross-national variation among 11 European countries. The book contains chapters on each of these countries, and there is a further empirical chapter, with an explicitly comparative aim, in which all the data sets were put together to allow formal analyses of differences between countries and changes through time. The data used in the project comprised 117 mobility surveys covering the period 1970 to 2000 (the number of tables per country ranging from 2 to 35). In contrast to Erikson & Goldthorpe (1992), whose temporal comparisons were based on the use of age groups taken from a single survey per country, the contributors to *Social Mobility in Europe* were able to make period comparisons using several surveys from each country.

The main findings of this research, which held true for both sexes, were at odds with those of *The Constant Flux*. First, absolute mobility flows had become more similar among countries so that, by the 1990s, variations in class structures and in rates of overall upward and downward mobility were far less than in the 1970s.



Thus, Lipset & Zetterberg's (1959, p. 13) assertion that "the overall pattern of social mobility appears to be much the same in the industrial societies of various western countries," although strictly wrong, was considerably closer to the truth by the end of the twentieth century than hitherto. Second, the authors claim to have found a general tendency, with one or two exceptions, such as Britain, toward increasing social fluidity. Earlier, Hout (1988) had found increasing social fluidity in the United States between 1972 and 1988. Third, Breen & Luijkx (2004b) report considerable cross-national variation in levels of social fluidity. What is the magnitude of these differences between countries? According to Erikson & Goldthorpe's (1992, p. 381) results, given a common pattern of local odds ratios in all the countries in their sample, an odds ratio that took the value of 3 in Czechoslovakia (the most open of their countries) would be equal to 5.3 in Scotland (the least open). Breen & Luijkx's results (2004b, p. 386) similarly show that an odds ratio of 3 in Israel would be an odds ratio of 7 in Germany. They also report that, in the case of the Netherlands, an odds ratio of 4 in the 1970s would have declined to 2.7 by the 1990s.

One striking development in recent research on social mobility is the use of high-quality data from countries outside Western Europe and North America. Japan and Australia have a fairly long history of collecting mobility data, and in a comparison of the two between 1965 and 1985, Jones et al. (1994) found a slight increase in fluidity in Australia but not in Japan (the latter result was also found by Ishida et al. 1991, Ishida 1993). Similarly, Hungary and Poland have long figured in comparative mobility research (e.g., Mach & Peschar 1990, Simkus et al. 1990), but Marshall and his coauthors extended the study of social mobility to state socialist societies in Eastern and Central Europe (Marshall et al. 1995, Marshall et al. 1997). Unfortunately, the samples were rather small, and so statistical tests had little chance of detecting cross-national variations in social fluidity. Social mobility in the former Soviet Union has been studied by Titma et al. (2003) and Gerber & Hout (2004), who find a decline in fluidity in postcommunist Russia [a result also reported by Robert & Bukodi (2004) for Hungary]. There have also been several studies of social mobility in Asian countries, including China (Cheng & Dai 1995, see also the review by Bian 2002), Taiwan and Korea (Park 2004, Phang & Lee 1996), and Hong Kong (Chan et al. 1995). These studies show both similarities and differences in social mobility compared with other industrialized countries, but no robust results concerning change.

### Which Are the Most Rigid and the Most Open Countries?

A fundamental question for understanding macrolevel variation in inequality of opportunity, or societal openness, is which countries should be classified as most open and which most rigid. Many scholars have assumed that persistent egalitarian policies should make for greater openness, for example, but, equally, scholars have long thought that the United States is an exceptional case, showing less rigidity than European countries.

A ranking of countries according to degree of openness must be approached cautiously because of data incomparability, conceptual problems, and measurement error. Furthermore, to the extent that countries differ in their patterns of fluidity, ranking them in any unidimensional way is unrealistic. Nevertheless, some characteristics appear to stand out in the reviewed literature. According to Breen & Lujckx (2004a,b), Germany, France, and Italy tend to represent the rigid pole in such a ranking.<sup>7</sup> The Scandinavian countries (particularly Sweden and Norway) together with Hungary and Poland appear to be consistently among the most open countries, as does Israel, whereas the Netherlands has become considerably more open over the past quarter century. England, on the other hand, has, over the same period, gone from being among one of the more open to one of the less open countries because, as noted above, it does not seem to have shared in the widespread trend toward greater fluidity.

An interesting issue is the ranking of the United States. In an attempt to make a comparison with European societies, Erikson & Goldthorpe (1992) concluded that the United States is fairly similar to them; the somewhat higher degree of fluidity they found was attributed to problems of comparability, stemming from lack of precision in the American occupational codings.<sup>8</sup> In a direct comparison between educational inequality in the United States and Sweden (one of the most equal countries in the existing literature), Hout & Dohan (1996) found the two to be very similar.

It is interesting to contrast these results with those found when inequality of opportunity is measured in terms of income. Studies of father-to-son (and sometimes -daughter) income mobility as well as sibling correlations of income<sup>9</sup> show the

<sup>7</sup>Germany's position as one of the least fluid societies had been established by earlier research (Erikson & Goldthorpe 1992, chapter 5). Previous analyses have found low rates of mobility (Checchi et al. 1999) and fluidity (Pisati & Schizzerotto 1999) in Italy.

<sup>8</sup>In another study, Erikson & Goldthorpe (1985) tested this by coding the English data with the same degree of uncertainty. The result was that England and the United States showed very similar social fluidity.

<sup>9</sup>Sibling correlations are a measure of the amount of variation in income that is explained by characteristics that siblings share, such as genetic endowments, parental resources, neighborhood characteristics, and, often, school factors. About one half of the sibling correlation is estimated to be due to genetic factors (Björklund et al. 2005), and only a small portion is likely to be due to neighborhood effects (Solon et al. 2000). Sibling correlations have frequently been used in sociology to study the "true" or "maximum" impact of the family of origin on education or social position (e.g., Hauser & Mossel 1985, Jencks 1979). Sieben et al. (2001) report that sibling correlations in educational attainment for East Germany are about 0.3–0.4, whereas in West Germany and the Netherlands they range between 0.40 and 0.55; this level of correlation is also reported for Scotland (lower bound) and England (upper bound), but as high as 0.7 in Spain (Sieben & de Graaf 2001, 2003). Corresponding correlations for the United States were 0.62–0.70 (corrected for measurement error) for brothers in 1973 (Hauser & Featherman 1976). Differences in samples make it difficult to draw conclusions from these estimates, however.

United States to be noticeably more rigid than the countries with which it has been compared (mostly the Nordic countries). In the United States and England, father-to-son elasticities are about 0.45; they are between 0.13 and 0.28 in Sweden and Finland, and 0.34 in Germany (Solon 2002). Brothers' correlations are about 0.4 in the United States, about 0.25 in Sweden, Denmark, and Finland, and even lower in Norway (Björklund et al. 2002).<sup>10</sup> These results point in a different direction to those concerning educational attainment and social fluidity. The most obvious reason for this is that the correlation between education and/or occupation and income is higher in the United States than in the more equal European countries (disregarding England), so even if Americans live in a fairly open society, the prevailing inequalities are more "costly" for a disadvantaged American and more profitable for someone privileged. (The examples are not just randomly chosen: In Björklund et al. (2002), the high degree of American inequality more or less disappears if the analysis excludes blacks or those with earnings in the top and bottom 5%.)

### How Can We Explain Change and Inter-Country Differences in Social Fluidity?

What causes variation in social fluidity? This is an important macrosociological question. Sieben & de Graaf (2001), analyzing brothers' correlations from six countries, find mixed support for the hypotheses that more socialist seats in parliament and modernization are associated with more equality of opportunity. Erikson & Goldthorpe (1992) claim that more equal societies are more fluid, whereas Breen & Luijkx (2004b) could not find any general support for this hypothesis. They observe, however, that social fluidity is relatively high in the formerly state socialist countries of Hungary and Poland and in social-democratic Sweden and Norway (see Western & Wright 1994); but although this suggests that redistributive policies may be one way a society can reach a high level of social fluidity, the fact that fluidity is also high in Israel and the Netherlands, for example, indicates that it may not be the only way.

Several analyses have pointed to the importance of the educational system as the driving force behind changes in social fluidity and differences between countries. Indeed, research in the status attainment tradition often finds that in most countries education largely mediates the association between origins and destination (e.g., Treiman & Yip 1989, Warren et al. 2002), whereas class mobility studies most often find stronger remaining "origin effects" in models incorporating educational attainment (Ishida et al. 1995).<sup>11</sup> However, in their study of class mobility, Breen

<sup>10</sup>One should note that sibling correlations are not an unproblematic measure. Apart from the fact that they amalgamate all kinds of effects, they also mix effects of parents with those of siblings and peers; and singletons are not included, of course, which may be a problem if the percentage of children without siblings differs between countries and if the origin effects are different for them.

<sup>11</sup>An essential part of this difference is no doubt due to the greater weight put on inheritance effects among the self-employed in class mobility research.

& Luijkx (2004b) argue that the path from origins to destinations via education is mediating an increasing share of the total origin-destination association in several European countries.<sup>12</sup> The importance of this pathway differs, however; it is strongest in Sweden (which might, therefore, be classed as the most meritocratic of the countries they analyze). Although the position of Sweden is consistent with the view that educational inequality is relatively weak there (Erikson & Jonsson 1996a), this is but one of two ways education might influence social fluidity rates. The other is compositional: If there is an association between origins, education, and destinations such that the origin-destination association is weaker at higher levels of education, and if the share of the population with higher levels of education expands, then this compositional change can be expected to lead to an overall reduction in the gross association between origins and destinations. This three-way interaction may be present when, for example, the job markets in which degree-holders operate are particularly meritocratic. Hout (1988) attributes the increase in fluidity in the United States to this effect, as does Vallet (2004) for France. Equalization and compositional effects may occur together because equalization almost certainly implies educational expansion. But as more people attain higher levels of education, the origin-destination association at these higher levels might strengthen (as shown by Vallet 2004), thus offsetting the compositional effect.

Whereas differences in societal characteristics such as modernization, inequality of condition, or the school system are often discussed as causes of international differences in social fluidity, variations in family structure are not. Nonetheless, Biblarz et al. (1997) find that, for the United States, “the farther alternative family structures take children away from their mothers, the more the intergenerational transmission process [between fathers and sons] breaks down. The result is less intergenerational inheritance and resemblance” (p. 1333, text in brackets added). This suggests that international variation in the share of different family types may play some part in explaining differences in social fluidity. Other structural factors may also be important, such as differences in the proportion of immigrants or ethnic minorities. This may affect overall fluidity insofar as advantages attached to social origin are not so easily transmitted for those who move to another country, leading to weaker inheritance effects (Heath & McMahon 1997, Hout & Rosen 2000).

## METHODS AND DATA

Research on inequality of opportunity, particularly social mobility research, has always been notoriously technical, although since 1990 it has largely tended to rely on techniques (especially log-linear and log-multiplicative models) developed in

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<sup>12</sup>The reason for this is not, as is often assumed, that there is a general “tightening bond” between educational qualifications and social position. Empirical studies on Sweden (Jonsson 1996), the United States (Hauser et al. 2000), Britain (Breen & Goldthorpe 2001), Ireland (Whelan & Layte 2002), Russia (Gerber 2003), and France (Vallet 2004) show more or less stable or even decreasing associations.

the 1970s. New technical developments have been extensions of these techniques, and probably the most important was the “unidiff” or “log-multiplicative layer effect model” (Erikson & Goldthorpe 1992, Xie 1992). It has been widely used in recent mobility research because it allows very parsimonious tests of differences in social fluidity across tables. Extensions of this model have been proposed by Goodman & Hout (1998). Other technical developments include the continued recasting, following Logan (1983), of log-linear models as logit models for individual level data (Breen 1994; for an application see Western 1999), and Logan’s work (e.g., 1996, 1998) on his “two sided logit model.” Researchers have also proposed models that allow the simultaneous modeling of the marginal and joint distributions of the mobility table (Becker 1994, Lang & Agresti 1994, Lang & Eliason 1997, Sobel et al. 1998). Latent class models of mobility have not proved popular, although Breen & Jonsson (1997) use latent class methods to correct for unreliability in reports of social class. There is a long and ongoing tradition of addressing issues of error in continuous measures used in stratification through structural equation modeling with latent variables (Allison & Hauser 1991).

The Mare (1981) model of educational transitions continues to be the main method of studying the origins-education relationship, although it has been extended by Breen & Jonsson (2000) and Lucas (2001), the latter also rebutting some of the criticisms of the identification of the model made by Cameron & Heckman (1998). Particularly in studies of educational attainment, multilevel models are now widely used. Statistical methods for overcoming the problem of unobserved heterogeneity and making causal interpretation more plausible have been improved during the 1990s, but they are not regularly used within stratification research (see the review by Winship & Morgan 1999). No doubt such methods, in addition to improved data collection (including experimental designs), will be important in future studies of inequality of opportunity.

Our knowledge about the world is never better than the data on which it is based. The 1990s witnessed improvements in access to reliable data, many of which are summarized in the comparative volumes cited above (e.g., Breen 2004). Progress has been made in several areas. There are more data and, unlike earlier studies that were often confined to men, more recent data include women. There are also more data points and better quality data, including coding that enables comparative study.<sup>13</sup> In some countries, large-scale data, either from a long series of surveys or via registers or microcensuses, allow the precise estimation of effects in stratification processes (e.g., Erikson & Jonsson 1998). Longitudinal studies in social stratification increase in value as they follow individuals over a long historical time (e.g., Sewell et al. 2004). Finally, there are data collected

<sup>13</sup>Many mobility tables have been collected by Ganzeboom and Treiman, who also provide algorithms for coding occupations into different structural variables (e.g., classes, prestige scales). See Ganzeboom’s homepage (<http://home.scw.vu.nl/~ganzeboom/index.htm>) and Ganzeboom & Treiman (1996).

explicitly for comparative purposes, so that measurement and wording in survey questions are designed to be comparable. However, those comparative surveys that are fielded in a large number of countries (such as ISSP and ESS) tend to have sample sizes that are too small to provide adequate statistical power. There is a potential for students of social stratification to increase their use of existing comparative data sets collected for studies of literacy and educational achievement, such as TIMSS.

## DEVELOPMENTS AND CHALLENGES

Developments since 1990 in the study of inequality of opportunity have been characterized by a cumulative growth of knowledge alongside persisting disagreements. Among the most robust findings of stratification research are that origin effects are stronger at earlier than later educational transitions; that education mediates a substantial part of the association between origins and destinations; that women display more social fluidity than men; and that the pattern of social fluidity is overwhelmingly shaped by inheritance, hierarchy, and sector effects (distinguishing, in particular, farm from nonfarm sectors), although the relative importance of each of these has been debated (see the December 1992 issue of the *European Sociological Review*). But there have been conflicting findings concerning the degree of cross-national variation and change in both the origin-education and the origin-destination relationships. In the former, the conclusion of almost no change reached in the Shavit & Blossfeld (1993) study has been contradicted by later analyses, while Breen's edited collection disagrees with Erikson & Goldthorpe's (1992) picture of approximate cross-national constancy in social fluidity. How might these be reconciled? First, studies that find no differences have often been based on smaller samples in which it is difficult to reject the null hypothesis. Second, more recent studies have made use of more powerful tests of change, especially the unidiff model. Third, in some cases the data refer to different time periods: That used in Breen (2004) comes from the last three decades of the twentieth century, whereas Erikson & Goldthorpe's data mainly come from around 1970.

Research on inequality of opportunity has been overwhelmingly oriented toward empirical description, with the consequence that convincing explanations of, for example, cross-national variation in the origin-education or origin-destination associations are lacking. A first step toward explanation is to use our existing knowledge to produce an exhaustive list of the set of family resources and institutional factors that impinge on the opportunities of children, and to measure their relative importance in particular societies. A further step is to develop models of the mechanisms through which these associations are generated. Today, many would agree that any theory accounting for social fluidity patterns should be built up from a model of rational actors operating within an institutional framework. There are several theoretical papers that approximate this ideal, to a greater or lesser extent

(Breen 1997, Goldthorpe 2000, Goux & Maurin 1997, Pisati 1997).<sup>14</sup> Such models offer the possibility of deriving testable micromodels of individual behavior, whose parameters might differ according to institutional or other characteristics of different societies, characteristics that ideally should also include the hiring process, given the centrality of employers' actions to allocation decisions.

The development of explanations might be helped by better research design and analytical strategies. For example, few studies of social mobility compare the experiences of different birth cohorts; yet, there are grounds for supposing that, in the normal course of events, change in fluidity is driven less by period change than by cohort replacement (which is reflected in the importance of educational attainment in the social reproduction process). If this is the case, the fluidity that we observe in period data will be a complex combination of historical processes and thus may prove resistant to explanation. A series of repeated cross-sectional data points will increase the opportunities for disentangling period and cohort effects.

The collaborative projects that we have reviewed have been based on increasingly comparable data, which has allowed them to move from visual examination of the results of similar analyses across countries (Shavit & Blossfeld 1993), to meta-analyses (Shavit & Müller 1998), and to direct modeling of individual-level data from different countries (Breen 2004). However, all these projects have used secondary data. The ideal and natural next step is for a group of researchers from different countries to design a comparative project in which data collection and measurement are standardized across nations.

Researchers widely accept that variations in observed mobility flows owe much more to differences (between countries or time points) in the marginal distributions of origins and destinations than to differences in social fluidity (Breen & Luijkx 2004b, p. 384; Erikson & Goldthorpe 1992, pp. 213–14; Grusky & Hauser 1984, p. 29). The emphasis that has been placed on studying fluidity might thus seem excessive, although if our interest is in inequality of opportunity, fluidity is, in fact, the proper thing on which to focus. This is because fluidity is an inherently comparative measure, assessing the advantages of different groups relative to one another. Nevertheless, it would be useful if researchers, when discussing variations in fluidity, calibrated the impact of such variation on observed mobility flows, given particular origin and destination distributions. We would not be surprised to find that apparently large differences in fluidity entailed rather little difference in observed mobility. Furthermore, the use of log-linear models, under which patterns of association are unaffected by scalar transformations of the margins, may have led mobility researchers to underestimate the degree to which structural change can affect inequality of opportunity in the real world.

<sup>14</sup>In addition, many economists have sought to explain the relationship between advantage and disadvantage in successive generations, although their work has often been entirely theoretical with no empirical content (Banerjee & Newman 1991, Galor & Zeira 1993) and is usually oriented toward explaining income or earnings (notably Becker & Tomes 1979, Solon 2004; see also the review by Grawe & Mulligan 2002).

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