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INTERGENERATIONAL MOBILITY AND SOCIAL FLUIDITY IN FRANCE OVER BIRTH COHORTS AND ACROSS AGE: THE ROLE OF EDUCATION

Louis-André Vallet
Observatoire Sociologique du Changement
CNRS & Sciences Po – Paris

In the foreword to the second edition (1978) of his influential book, *L'inégalité des chances. La mobilité sociale dans les sociétés industrielles* (1973), Raymond Boudon clarified that he wrote this volume in order to provide an explanation for an apparent paradox: “all industrial societies have been characterized for several decades by a certainly slow, but also significant and steady decrease of inequality of educational opportunity. However, this reduction has had only modest effects on the level of the social heritage”¹. In the early 1970s, data on social mobility and educational inequalities were rather scarce and series of surveys spanning several decades were unavailable so that Boudon had to rely on a simulation model. Moreover, within his argument, he did not clearly distinguish between change in the distribution of education, i.e., the ongoing educational expansion, and change in the allocation of education between persons of different backgrounds, i.e., the democratization *per se*. More recently and in two related publications (1997, 2001), Michel Forsé has also stressed that the decrease of inequality of educational opportunity is not sufficient to reduce inequality of intergenerational occupational opportunity. According to his interpretation of the analyses he performed on the male population in two French Labour Force Surveys that are fifteen years apart, two phenomena are responsible for the lack of any substantial effect of educational change on social mobility. On the one hand, the educational expansion that mechanically results from the strategic behavior of individuals who wish to maintain or improve the social status of their family of origin induces a progressive decline of the returns of education on the labour market. On the other hand, the returns of a given level of education in terms of occupational status also vary according to social background, being generally weaker for those individuals who originate from more modest backgrounds.

In the continuation of these previous efforts, this chapter aims at systematically reexamining the relationship between educational change and social mobility change. On the basis of a high-quality series of surveys that cover the cohorts born in France in the first three quarters of the XXth century and utilizing more advanced and powerful statistical methods, it will empirically assess and demonstrate the role that education, in its different components, has played in the dynamics of social mobility and social fluidity. Indeed, adopting a cohort-based analytical approach will illuminate that educational expansion and educational equalization have been the fundamental mechanisms at the root of an increase in social fluidity within French society, that the relative importance of those mechanisms has evolved over birth cohorts, and that, most recently, for men but not for women, their positive effect has partly been offset by an increasing ascriptive effect.

We begin with a brief description of the French educational system and the main transformations that have affected it in the course of the XXth century, then we summarize the conclusions of previous research on social mobility in France that has mostly been conducted in a period (or survey) perspective. The third

¹ Our translation of « toutes les sociétés industrielles sont caractérisées depuis plusieurs décennies par une diminution lente certes, mais non négligeable et régulière de l'inégalité des chances devant l'enseignement. Pourtant, cette diminution n'a eu que des effets modestes sur le niveau de l'héritage social » (1978, p. I).

section is devoted to a presentation of our data and observational design for analyzing the social trajectories of men and women born between 1906 and 1973. Then we describe the transformations of the origin, education and destination distributions over birth cohorts as well as those of observed mobility rates. The major analytical part is devoted to the analysis of change in the fundamental statistical associations – origin-destination, origin-education and education-destination – as well as a simulation exercise, following Breen (2010), that is able to reveal the contribution of educational change to social fluidity change. Finally, we conclude by discussing our main results, putting special emphasis on the nuances that the cohort perspective reveals between the social mobility experience of women and that one of men.

The expansion and unification of the French educational system over the XXth century

According to the historian of education Antoine Prost (1968: 10), ‘The France of the nineteenth century juxtaposes two schools: the school of notables and the school of the people’. This differentiation in two highly separated tracks has persisted during the first two-thirds of the XXth century. On one side, the primary track was essentially hosting the children of farmers, agricultural workers as well as manual and routine non-manual workers. It was not only composed of the elementary school, but, after a diploma entitled *certificat d’études primaires*, was also offering four additional years of general and vocational education in the *écoles primaires supérieures* or the *cours complémentaires*. On the other side, the secondary track was mostly hosting the children of the bourgeoisie and had its own elementary classes, followed by years of general education in the *lycées* up to the *baccalauréat*. Even if the payment of fees for attending the secondary classes was suppressed in the early 1930s, families of modest extraction were still rather reluctant to send their offspring to the secondary track. A more concrete and less general curriculum was offered in the upper primary track which, compared to the *baccalauréat*, was also providing youths with better opportunities to enter the labour market in skilled intermediate positions within trade or industry. From the family side, the competition between the upper primary track and the secondary track was largely in favor of the former (Prost, 1997: 88).

In 1941, the French Minister of Education in the Vichy Government, Jérôme Carcopino, who judged this competition unfair, decided to embed the *écoles primaires supérieures* in the secondary track. As an unintended consequence, this reform opened up the upper primary track, offering its pupils a double chance in a less risky educational investment: for those with high academic achievement, the possibility to enter the *lycée* at the level of the *classe de seconde* (tenth grade) and to gain access to the *baccalauréat*, as their schoolmates with higher social background; for the others, rather attractive opportunities at the intermediate level on the labour market (Prost, 1997: 91). According to an historical and monographic study in the secondary schools of the Orléans area, the share of manual worker children in the general track of the *classe de seconde* grew from 8.7% in 1947-1949 to 15.5% in 1952-1954, then 21.5% in 1962-1964, while the relative importance of children from the service class and the liberal professions remained much more stable (Prost, 1986: 145). According to this study, the inequality of educational opportunity therefore diminished as a consequence of Carcopino’s reform, but the trend was largely unnoticed at the country level because, at the end of the 1950s and the early 1960s, national statistics were essentially scrutinizing the outset of the secondary school, i.e., the *classe de sixième* (sixth grade), characterized by strong social inequalities in access probability (Girard and Bastide, 1963; Ichou and Vallet, 2013).

The process of unification of the French educational system occurred with the explicit aims of enlarging access to education and promoting equality of educational opportunity. While the rate of access to the *classe de sixième* was only 36.9% in the 1939-48 birth cohort and 46.7% in the 1949-53 one, it suddenly rose to 75.4% in the 1954-58 cohort, then 91.6% in the 1959-63 one (Duru-Bellat and Kieffer, 2001). Since 1936, the end of mandatory schooling has been fixed at the age of 14 and the Berthoin reform (1959) postponed it

until 16 for all children born in 1953 or later. After five years of elementary education, the same reform also implemented a common two-year observation cycle, thereby introducing a corresponding delay before the first educational transition. It finally transformed the *cours complémentaires* in the *collèges d'enseignement général* (CEG). Along the same path, the Fouchet reform (1963) added a two-year orientation cycle and also created a new type of autonomous schools, the *collèges d'enseignement secondaire* (CES), to deliver the four years of lower secondary education. The CEG and CES however maintained an internal differentiation between several tracks in terms of the intensity of the curriculum they offer. Although the Haby reform (1975) formally abolished this stratification in order to establish the *collège unique*, until the early 1990s low achievers were still at risk of being oriented in a poorly considered pre-vocational track after only two years of secondary education. The creation of a new intermediate-level vocational diploma – the *brevet d'études professionnelles* – intervened in 1967 and a differentiation was also introduced at the *baccalauréat* level, adding to the general one that has existed since the XIXth century the technological *baccalauréat* in 1968, then the vocational *baccalauréat* in 1985.

Paradoxically, the results of the historical study in the Orléans area for the post-reform period demonstrate a stagnation in the process of democratization, i.e., an interruption of the trend that appeared after Carcopino's decision. According to Antoine Prost's interpretation of this unintended consequence of the reforms, the process of unification has essentially aligned the upper primary track onto the old and classical secondary track. Even if children of all social backgrounds have got access to the first classes of secondary school, those of more modest extraction are lower achievers on average and they also repeat a grade more frequently. As a consequence, most of them have been progressively diverted from the prestigious and promising tracks of upper secondary school because of the internal differentiation within the CEG and the CES as well as the newly established orientation processes during and after lower secondary school (Prost, 1997: 107-111).

While historical research clearly suggests that France experienced a significant decline in inequality of educational opportunity during a time span of approximately two decades (1945-1965), educational expansion has been continuous, though not linear, throughout the XXth century. A more skilled labour force was required as a consequence of the progressive modernization of the economy, the development of the tertiary sector and the technological progress. And families themselves, aware of these transformations, were spontaneously looking for a more advanced education of their children in order to promote their social mobility (Prost, 2004: 11-15). The median school leaving age, which was less than 14 for the 1900 birth cohort, slowly grew until 15 for the 1937 cohort before a very sharp acceleration – 'the first school explosion' – to attain 17 in the 1947 cohort. Then a more moderate growth occurred again – 18 in the 1958 cohort, 19 in the 1968 one – followed by 'the second school explosion' where the median school leaving age nearly reached 22 for the cohort born in 1975 (Chauvel, 1998a).

The first school explosion, when considered in numerical terms, mainly concerned the upper primary and lower secondary levels, but the second school explosion occurred at the upper secondary one. A tiny minority of 5.1% of a generation passed a *baccalauréat* in 1950. Even if this proportion doubled twice in the following two decades, reaching 11.4% in 1960 and 20.1% in 1970, it was still a minority of 3 out of 10 youths born around 1967 who passed a *baccalauréat* in 1985 (Ichou and Vallet, 2011; Merle, 2009). Then an exceptional growth occurred during a decade as a consequence of major educational policy decisions: the 1985 Law aimed at developing technological and vocational education and the 1989 Orientation Law voluntarily fixed the rate of 80% of a generation to reach the *baccalauréat* level in the year 2000. The share of a generation holding this degree suddenly more than doubled in ten years, rising from 29.4% in 1985 to 62.7% in 1995, and it stayed more or less unchanged thereafter, attaining 62.8% in 2000 and 62.3% in 2008. The 1985-1995 expansion concerned all types of *baccalauréat* – general, technological and the newly

created vocational one – but it was more marked in the two latter categories. The relative importance of the traditional (general) *baccalauréat* has therefore diminished in the last decades of the XXth century: it was possessed by all new *baccalauréat* holders until 1968, still more than 80% in 1972, but only just over a half at the end of the 1990s.

Finally, expansion and diversification have also characterized higher education in France. Its growth has been more sustained after 1960 than it was in the first half of the XXth century. In 1960, 310,000 students belonged to the tertiary education system and this number nearly tripled in the next decade, reaching 851,000 in 1970, then more than one million in 1980 and more than two millions in 2000 (MENESR, 2015). While three quarters of the students were hosted in ‘traditional’ universities in 1970, their share has declined until less than 60% in 2000. This reflects the sustained development of short vocational higher education institutions – with the creation of the *sections de techniciens supérieurs* in 1959 and the *instituts universitaires de technologie* in 1966 – as well as the development of other public and private schools at the tertiary level. On the contrary, it is remarkable that the *classes préparatoires aux grandes écoles* whose attendance is required before the competitive entrance in the French elite schools (*grandes écoles*) have hosted a decreasing proportion of tertiary education students, from 6.8% in 1960 to 3.9% in 1970 and 3.2% in 2000 (MENESR, 2015; see also Albouy and Wanecq, 2003).

As emphasized above, the expansion of the French educational system was partly driven by the modernization of the economy and the development of the tertiary sector that have also been responsible for an upgrading of the qualification of the labour force. The educational expansion has nonetheless exceeded the amelioration of the occupational structure. The ratio of the percentage of men and women with tertiary level graduation to the percentage of their first jobs in the lower or upper service class was only 0.6 in the 1938-44 cohort. It became equal to 1.0 in the 1957-62 cohort, then reached 1.1 and 1.4 in the 1963-68 and 1969-75 ones (Bouchet-Valat, Peugny and Vallet, 2016), raising therefore concerns about trends in the occupational returns to education and the issue of overeducation (Baudelot and Glaude, 1989; Forgeot and Gautié, 1997; Goux and Maurin, 1998; Nauze-Fichet and Tomasini, 2002).

What we know about trends in intergenerational mobility and social fluidity in France

Since the first collection of nationally representative data on paternal occupation that occurred in the 1953 *Enquête sur l'emploi*, the analysis of intergenerational social mobility and its temporal trends within French society has typically been conducted by comparing successive surveys for a given population defined with a wide age range. Thélot (1976), then Goldthorpe and Portocarero (1981) compared the mobility tables for men in the 1953 survey and the 1970 *Formation – Qualification Professionnelle* (FQP) survey without restricting the analysis to any particular age group. Then Thélot (1982) extended the comparison to the 1977 FQP survey, but concentrated on men aged between 40 and 59². Vallet (1991) did the same for women aged between 30 or 35 and 59 in the 1953 to 1985 surveys. Then again, for men and women of the same age range in 1953, 1970, 1977, 1985 and 1993 (Vallet, 1999). Using the 1977, 1985, 1993 and 2003 FQP surveys, the most recent comparison focused on French men and women, aged between 35 and 59, currently or formerly in employment (Vallet, 2014). Following a period – or survey – approach, these analyses have cumulatively established two main conclusions.

First, the observed mobility – or absolute mobility rates – has steadily increased in France since the middle of the XXth century. In the early 1950s, one man or woman out of two belonged to a different social class

² In all French mobility surveys, the question about father's occupation refers to the moment when the respondent stopped attending school or university on a regular basis. Restricting the analysis to mature men (or women) therefore allows the comparison of fathers and sons (or daughters) at an approximately similar age.

than their father. At the beginning of the 1990s, this is the case for two out of three men and three out of four women. In 2003, absolute mobility is still slightly stronger. In each survey, upward mobility is more frequent than downward mobility although, since 1985 and among men, the dominance of the former over the latter has become less favorable. This growth in observed mobility has essentially resulted from the structural transformations of France, from a largely agricultural to an industrial, then post-industrial, society. Such a shift has enlarged the dissimilarity between the class distribution of men and women and that of their fathers, which has increased the absolute rates of intergenerational mobility. Second, the observed mobility growth has also originated from a slow increase in social fluidity, i.e., from a slightly reduced intergenerational distance between social classes. Thélot (1982: 78-79) estimated that one fourth of the total reduction in class immobility between 1953 and 1977 was due to this increased societal openness. The movement has gone on. For instance, in 1977 and among men aged between 35 and 59, the odds of holding a managerial or professional position rather than a manual worker one were 92 times higher for the sons of the former class origin than for those of the latter. In 2003, the same odds ratio amounts at 29, which depicts a weaker, albeit still important, inequality of occupational opportunity. The trend towards a reduced association between class origin and class destination can also be discerned among women and with other social classes. In total, it can be estimated that, in 2003, between 3 and 5% of men and women aged 35 to 59 have class destinations that differ from those they would have held if nothing had changed in the strength of the association between class origin and destination over a quarter of a century (Vallet, 2014).

Incorporating the achieved level of education as an intermediate variable between class origin and class destination, Vallet (2004) has examined some plausible causes of this increase in social fluidity between 1970 and 1993. His conclusions, based on the very wide population of men and women aged 25 to 64 and a period – or survey – perspective, suggest that, for both sexes, three elementary transformations have occurred: an uneven decline in the inequality of educational opportunity – the Origin-Education association – which was especially marked between the 1970 and 1977 surveys; a monotonic decline over the four surveys in the relative occupational advantage afforded by education – the net, i.e., controlling for class origin, Education-Destination association; a compositional effect by which the expansion of education has progressively increased the relative size of the highest educational categories for which the direct effect of origin on destination is reduced. Among the three sides of the Origin-Education-Destination ‘triangle’, the ‘direct’ Origin-Destination association was therefore found to be the most stable over the 1970-1993 period, a conclusion that also corroborated Goux and Maurin’s previous statement according to which “there is no evidence of a decline of the OD net association” (1997: 173).

It must however be emphasized that the previously adopted period – or survey – perspective presents some disadvantages. On the one hand, as the age range of the population under scrutiny is generally wide, a number of birth cohorts are indeed observed in two or more successive surveys, but at various moments of their occupational and social trajectories. In contrast, the most ancient cohorts are only present in the first survey while this is exclusively in the last one that the youngest cohorts are scrutinized. Consequently, between two successive surveys, the global variation observed for the whole population is the result of a complex and rather abstract aggregation. On the other hand, as education is generally acquired at a specific moment of the life course, it is between cohorts that educational change occurs and can subsequently affect the dynamics of the individual trajectories. The reviewed development of the French educational system itself exemplifies this inherently cohort-driven character: the expansion of education has been uneven, with the first and second school explosions respectively impacting the cohorts born in the 1940s and those born from the late 1960s; and, as suggested by Prost’s historical research, the reduction of educational inequality has been strong for the cohorts born in the 1940s and early 1950s before slowing down thereafter (see also Thélot and Vallet, 2000; Selz and Vallet, 2007). Adopting a birth cohort perspective certainly is the most

compelling strategy to reveal the contribution of educational change to social mobility and social fluidity change.

Some contributions have already adopted such an approach, but mainly dealt with absolute mobility rates (see in particular Baudelot and Establet, 2000; Chauvel, 1998b). The latter author has emphasized that French men and women born between the late 1930s and the late 1940s benefited from a favorable context that subsequent cohorts did not encounter to the same extent. Not only were they more qualified than their elders, but they also got high returns to their educational investments due to the rapid transformation of the French occupational structure, especially the increase of the tertiary sector and the multiplication of medium- and high-skilled corresponding jobs.

More recently, using a series of five Labour Force surveys, Peugny (2007) has scrutinized the social mobility experience of men and women in the cohorts 1924-28 to 1974-78. Using a classification inspired by the Erikson, Goldthorpe and Portocarero class schema, he confirmed that the ratio of upward mobility to downward mobility peaked for men and women born between 1939 and 1948, then steadily declined for subsequent cohorts. For instance, at the age of 35 to 39, the ratio amounted at 2.55 for men in the 1944-48 cohort, but 1.63 in the 1964-68 one, respectively 1.68 and 1.20 for women. This declining trend is partly related to a less rapid and favorable evolution in the occupational structure during the recent decades as opposed to the ‘Trente Glorieuses’ period, notwithstanding the fact that the youngest cohorts were more educated as a consequence of the second school explosion. Using linear multiple regression to analyze the determinants of a socioeconomic status score for, separately, men and women in the 1941-50, 1949-58 and 1959-68 cohorts, Peugny highlighted clear signs of declining occupational returns to education across cohorts, as well as an increasing net effect of the father’s socioeconomic status score. It is therefore important to extend the analysis in terms of change in social fluidity and its basic mechanisms over birth cohorts.

Survey data and observational design

In each of the 1970, 1977, 1985, 1993 and 2003 *Formation – Qualification Professionnelle* (FQP) surveys³ (variable S), we selected for the analysis all men (respectively all women), French and foreigners, living in metropolitan France, currently or formerly in employment, aged between 30 and 64 at the date of the survey and for whom both class origin, education and class destination are known. The total size of the analytical sample is 64 801 for males and 46 079 for females. Then we distinguished among them six birth cohorts (variable C) – 1906-24, 1925-34, 1935-44, 1945-54, 1955-64 and 1965-73 – which leads to the observational design shown in Table 1.

[Table 1 about here]

By construction, the oldest cohort is observed at an advanced age in all surveys while it is the case at a rather young age for the most recent cohort (Panel a of Table 1). However, previous research has clearly suggested that social fluidity may well vary across age in France⁴. It is therefore necessary to allow for the possibility

³ These surveys were conducted by the French National Institute of Statistics and Economic Studies (INSEE). A synthetic presentation of the FQP series and a description of how the occupational and educational CASMIN schemes can be implemented on these surveys can be found in the appendix of a previous contribution (Vallet, 2004: 143-145).

⁴ Comparing men in four ten-year birth cohorts in the same 1970 FQP survey, i.e., men whose class destination was observed at systematically different ages, Erikson and Goldthorpe (1992, chapter 3, p. 94-5) found steadily *decreasing* social fluidity in France from the oldest cohort (men aged 55-64) to the youngest one (men aged 25-34). However, extending the comparison to men in the same age range, but observed in several surveys of the same FQP series, Vallet

that the Origin-Destination and Education-Destination associations evolve with age advancement. To this end, considering the different diagonals of Panel a, five age groups (variable A) can be roughly distinguished: main diagonal in grey (*middle*), first superdiagonal (*old*), second superdiagonal (*old+*), first subdiagonal (*young*) and second subdiagonal (*young+*).

Within each cell of our analytical design, we observe the class origin, the level of education attained and the class destination of the corresponding individuals. Class origin (variable O) is defined as the class (or last class) of the father when the respondent stopped attending school or university on a regular basis. Class destination (variable D) is the current (or most recent) class of the respondent according to his own occupation at the date of the survey (or his most recent occupation). Both variables are defined in the context of the CASMIN class schema (Erikson and Goldthorpe, 1992) with seven categories: I Higher service class; II Lower service class; IIIa Routine non-manual employees (higher grade); IVab Petty bourgeoisie; IVc Farmers; V+VI Skilled workers; VIIab+IIIb Non-skilled workers and routine non-manual employees (lower grade). Level of education attained (variable E) is defined as the respondent's highest diploma obtained in initial schooling including apprenticeship, i.e., without taking post-school training or in-service training into account. It is defined in the context of the old version of the CASMIN education schema (Brauns and Steinmann, 1999) with six categories: 1ab Inadequately completed general education, General elementary education; 1c Basic vocational qualification; 2ab Intermediate general or vocational qualification; 2c General or vocational maturity certificate; 3a Lower tertiary education; 3b Higher tertiary education⁵.

Within each cell of our analytical design, extrapolated frequencies have been computed using the survey-specific weight coefficient so that they accurately reflect the corresponding counts in the French population. Then they have been downscaled to represent the exact number of cases surveyed in the corresponding cell (Panel b of Table 1). The whole statistical analysis has finally been performed on the five-way CSOED contingency table (where C and S respectively correspond to Cohort and Survey) or, after a rearrangement of the cells, an equivalent CAOED contingency table (where A corresponds to Age).

Historical trends in the class origin, class destination and education distributions

Trends over cohorts in the class origin distributions strikingly reflect the transformation of the French economy and society over the first three quarters of the XXth century (Figure 1a). In the 1906-24 cohort, 3 out of 10 men and women grew within a farmer family, but the agricultural extraction only represents less than 8% in the 1965-73 cohort. The other independent class – the petty bourgeoisie – also declined throughout the century, though rather slightly. On the contrary, for both men and women, it became more frequent to originate from the upper service class (from 4% to 11%), the lower service class (from 3% to 9%) and, above all, the skilled working class (from 17% to 31% for men and 30% for women). Finally, the relative importance of the skilled non-manual class (IIIa) and the semiskilled and unskilled working class (VIIab-IIIb) has been much more stable across cohorts (around 6% for the former and 24% for the latter).

[Figure 1 about here]

Moving to the examination of the class destination distributions, i.e., the occupations held by the respondents themselves, largely reveals the same trends, albeit exacerbated (Figure 1b). The agricultural class has nearly

(1999) discovered a monotonic trend towards *increasing* fluidity over forty years. The existence of variation in social fluidity across age is the only factor that can explain the discrepancy between both conclusions.

⁵ Category 3a cannot be distinguished from category 3b for the cohorts born between 1906 and 1917 in the 1970 FQP survey. See Vallet (2004: Table 5.A1) for the precise correspondence between the CASMIN educational categories and the French diplomas.

disappeared throughout the century and only represents 3% of men and 1% of women in the 1965-73 cohort while a sharp decrease has also characterized the petty bourgeoisie: it has declined from 12% to 5% for men and 3% for women. French society has progressively become a 'salaried society' as well as a more skilled society. Both the service class and the skilled manual and non-manual classes have expanded while the share of the class of non-skilled workers and non-manual lower grade employees has progressively diminished: it represented 27% of all men in the 1906-24 cohort, but 23% in the 1965-73 one (respectively 43% and 32% among women).

Even if the relative importance of the different classes has evolved across cohorts with the modernization of French society, the same graphs also reveal the persistence of a strong differentiation of the class distributions according to gender. In all cohorts, women are more represented than men in the non-skilled manual and non-manual class (VIIab-IIIb) as well as in the skilled non-manual class (IIIa), but men are much more represented than women in the skilled working class (V-VI). Moreover, within the service class, in all cohorts again, class I dominates class II among men while the reverse is true among women, thereby reflecting the disadvantages that the latter suffer from on the labour market as regards their career opportunities and progression.

This is, however, for the level of education attained, that change throughout the XXth century has been especially tremendous (Figure 1c). In the 1906-24 cohort, 78% of men and 82% of women achieved no more than a general elementary education (1ab) while the same category has fallen to 20% of the former and 16% of the latter in the last cohort surveyed. At the other extreme of the educational distribution, it was only a tiny minority of women in the 1906-24 cohort (1%) who held an upper tertiary diploma (3b), but the same percentage amounts to 17% in the 1965-73 cohort. Corresponding figures for men are respectively 3% and 15%. Indeed, already remarkable among men, the educational expansion in France has been even more pronounced among women. In this respect, our data also reveal that, beginning with the 1935-44 cohort, the share of the population that holds at least an upper secondary diploma (*baccalauréat* or equivalent) has become consistently larger in the female part than in the male one.

According to our observational design, all but one cohorts covered in our analysis are represented in at least two successive surveys, which provides us with a straightforward test of the general quality and coherence of the data we have assembled. Beginning with the class origin distributions, we should observe that, within a birth cohort, these distributions are 'fixed' and do not vary across surveys, i.e., when the samples of respondents are observed at a younger or older age. Our data behave satisfactorily in this respect: for none of the five cohorts present in at least two surveys do we observe any serious difference or trend over surveys in the distributions of class origin. The same rationale should also apply to the distributions of education as the definition of our variable only takes *initial* training into account. The general response is again rather satisfactory, but we nonetheless observe that, for a given cohort, the relative importance of the lowest educational categories (1ab and, to a lesser degree, 1c) is smaller in more recent surveys while the opposite is generally true for the other and more advanced categories. Such a result has already been described for France (Baudelot, 1989). The explanation probably relates to the fact that, in more recent surveys that, by definition, are done in a 'more educated society', it would be more difficult for respondents to declare a weak or very weak level of educational qualification. Albeit discernible, this bias is not sufficiently marked to seriously impede our subsequent analyses.

On the contrary, regarding the third variable, there is no reason to expect that, within a given cohort, the class distribution of the occupations held by the respondents should be invariant across surveys. First, the class destination distributions reflect the structure of the current workforce that evolves over time because of economic and technological change – for instance, the progressive contraction of the primary and secondary

sectors and the continued expansion of the tertiary one. Second, even if intra-generational or career mobility may intervene in both directions, we may expect some predominance of upward mobility if the incumbents of occupations are promoted as a consequence of a longer experience on the labour market. Our data indeed confirm such an expectation. Within each of the five cohorts observed across several surveys, the share of the upper service class regularly increases from the oldest survey to the most recent one, i.e., when the members of the cohort become older. This is especially striking for men in the 1935-44 cohort – class I increases from 8% in 1970 (at the age of 30-35) to 17% in 1985 (at the age of 41-50), then 20% in 2003 (at the age of 59-64) – and men in the 1945-54 cohort. These results are coherent with previous research in France (Baudelot and Gollac, 1997; Chauvel, 1998b; Koubi, 2004; Peugny, 2007). Regarding the class destinations of women, the same age trend is also apparent, albeit less marked: in the 1935-44 cohort for instance, the share of class I varies from 3% in 1970 (at the age of 30-35) to 6% in 1985 (at the age of 41-50), then 8% in 2003 (at the age of 59-64).

We must therefore emphasize that the occurrence of career mobility has an important logical consequence for our analysis. Given our design, more recent cohorts are observed on average at a younger age than more ancient cohorts. That suggests that analyses, in either absolute or relative terms, that do not control for age will probably *underestimate* the extent of change.

Historical trends in observed mobility or absolute mobility rates

How have outflow rates in the different class destinations evolved over cohorts among members of the different class origins? We begin by scrutinizing the male sample⁶. For those men who have grown up in the upper or the lower service class, it is noticeable that the class distribution has not improved and has even deteriorated from the ancient to the recent cohorts – with, in particular, less immobility within the service class and more downward moves in the skilled working class (V-VI). With regard to access to the upper and lower service class or, more generally, the different class destinations, this is essentially stability over cohorts that characterizes men originating from either the skilled non-manual class (IIIa) or the non-skilled working and non-manual class (VIIab-IIIb). On the contrary, access to the service class has rather clearly enlarged over cohorts for sons of the petty bourgeoisie (IVab), the agricultural class (IVc) and the skilled working class (V-VI). All in all, those trends might therefore suggest some increase in social fluidity from the ancient to the recent cohorts.

The same examination performed on the female sample points to a more general and sustained change across cohorts. The access to the upper service class has widened for women of all class origins and the increase is particularly visible for those coming from the skilled non-manual class and the petty bourgeoisie (from 4% in the first cohort to 12% in the last one, for both cases). Similarly, the access to the lower service class has also enlarged for women of all class origins except the service class: in particular, from 4% to 15% among the daughters of farmers, from 7% to 20% among those of skilled manual workers, and from 3% to 13% among those of non-skilled workers. On the contrary, ‘falling’ in the class of non-skilled manual workers and lower grade non-manual employees has become less frequent for women originating from the skilled working class (from 53% to 36%) and the unskilled one (from 63% to 48%). Put together, these trends for the female workforce again suggest an increase in intergenerational fluidity, perhaps more pronounced than among men.

⁶ Because of lack of space, it is impossible to reproduce the complete set of class destination by cohort distributions, conditionally on class origin. It is, however, available from the author upon request, for both men and women. The same applies to the other distributions evoked below: the education by cohort distributions, conditionally on class origin, and the class destination by cohort distributions, conditionally on level of education attained.

[Table 2 about here]

We conclude this brief overview of absolute mobility rates with a comparison of mobility tables in the two extreme cohorts, i.e., that one observed in 1970, at the age of 46-64, for the 1906-24 cohort, and that one observed in 2003, at the age of 30-38, for the 1965-73 cohort. Although the comparison cannot be strict due to age discrepancy, it is nonetheless instructive. For men as well as for women, the total mobility rate – the off-diagonal cells – has increased and this is entirely due to a sustained growth of vertical mobility and its two components, upward and, more remarkably, downward mobility. Finally, even if it represents rare trajectories, long-range social mobility in both directions has become less infrequent. This is especially the case for long-range downward mobility that was quite uncommon, for both men and women, in the 1906-24 cohort.

Do recent cohorts experience more intergenerational social fluidity than ancient cohorts?

In order to examine whether French society has experienced greater openness across cohorts, that is, more social fluidity or a somewhat weaker association between class of origin and class of destination, we rely on so called Unidiff (Erikson and Goldthorpe, 1992) or log-multiplicative layer effect (Xie, 1992) models (Table 3). We start from a model that faithfully reproduces the origin and destination marginal distributions of our C*S, i.e., twenty mobility tables, but simultaneously assumes a strict constancy – in terms of odds ratios – of the association between class of origin and class of destination (Model 1). Then we allow a hypothetical variation of this association across cohorts, in terms of its general strength (Model 2)⁷. In comparison with Model 2, Model 3 examines whether the general strength of the association has varied not only over cohorts, but also and additively, across age⁸. Finally, two supplementary models are estimated. Model 4 tests whether, after allowing for the independent effects of cohort and age on the general strength of the origin-destination association, any additional variation still exists according to survey (or period). And Model 5 examines whether it is necessary to go further than the simple additive combination of cohort effect and age effect in the Unidiff or log-multiplicative parameter⁹.

[Table 3 about here]

As regards men, Model 2 detects a significant and rather modest increase in social fluidity over cohorts: fixed at 1 in the 1906-24 cohort, the log-multiplicative parameter is estimated at 1.10 in the 1925-34 cohort, then regularly declines until 0.90 in the 1965-73 cohort. Moreover, the fit of the model is significantly improved by authorizing an additional age effect (Model 3). The log-multiplicative age parameters very clearly reveal that social fluidity tends to be larger, or the origin-destination association tends to be weaker, when the respondents are surveyed at an older age. Incorporating this age effect also reveals an enlarged cohort effect, i.e., a stronger increase in social fluidity. Fixed at 1 in the 1906-24 cohort for people of the middle age range, the log-multiplicative parameter is now estimated at 1.07 in the 1925-34 cohort, then

⁷ If c denotes any cohort, s denotes any survey, i and i' (respectively j and j') denote two classes of origin (respectively two classes of destination), Model 1 implies that the corresponding logged odds ratio in cohort c and survey s is equal to:

$Log(od_{cs}) = \lambda_{ij}^{OD} + \lambda_{i'j'}^{OD} - \lambda_{ij'}^{OD} - \lambda_{i'j}^{OD}$ while Model 2 implies that: $Log(od_{cs}) = \beta_c(\lambda_{ij}^{OD} + \lambda_{i'j'}^{OD} - \lambda_{ij'}^{OD} - \lambda_{i'j}^{OD})$ with β_c conventionally fixed at 1 for the 1906-24 cohort.

⁸ Here $Log(od_{cs}) = (1 + \beta_c + \beta_a)(\lambda_{ij}^{OD} + \lambda_{i'j'}^{OD} - \lambda_{ij'}^{OD} - \lambda_{i'j}^{OD})$ where β_c and β_a now represent deviations from a reference category (1906-24 for cohort and *middle* for age).

⁹ $Log(od_{cs}) = (1 + \beta_c + \beta_a + \beta_s)(\lambda_{ij}^{OD} + \lambda_{i'j'}^{OD} - \lambda_{ij'}^{OD} - \lambda_{i'j}^{OD})$ for Model 4 and $Log(od_{cs}) = \beta_{ca}(\lambda_{ij}^{OD} + \lambda_{i'j'}^{OD} - \lambda_{ij'}^{OD} - \lambda_{i'j}^{OD})$ for Model 5.

declines until 0.81 in the last cohort. Finally, it appears that none of the additional complexities entailed by Models 4 and 5 is needed.

The same analysis among women yields similar conclusions, confirming that greater societal openness becomes clearly visible, starting from the 1935-44 cohort. It also provides us with two suggestive nuances. First, the reduction of the origin-destination association has been more sustained in the female part of the workforce: a 42% increase in social fluidity – as measured on the appropriate, but rather abstract, scale of the logarithm of the odds ratios – compared to a 19% or 26% increase among men, depending on whether the first or the second cohort is considered as the point of departure. Second, the reduction of the origin-destination association across age, that is, along the occupational career, is more limited among women than among men¹⁰.

Three elementary mechanisms to explain the increase in social fluidity over sixty years

Change over cohorts in the inequality of educational opportunity

Considering the three sides of the Origin-Education-Destination ‘triangle’, democratization of education *per se*, that is, a decline in the strength of the association between class of origin and level of education attained, is a first phenomenon that may have intervened to engender greater societal openness across cohorts in France. A detailed examination of how educational distributions have evolved along the XXth century primarily shows that men and women of *all* class origins have benefited from the provision of more advanced education. And using as a criterion the decline in the relative importance of the lowest educational category (1ab) also suggests that a trend towards equalization has occurred even if the improvement in education has been more marked among children of the agricultural class than among those of the working class, either skilled or unskilled. For instance, in the 1906-24 cohort, 91% of sons and 94% of daughters of farmers attained no more than a general elementary education, but the same percentages amount to 19% and 15% in the 1965-73 cohort. Corresponding figures for men and women originating from the skilled working class were respectively 73% and 82% in the first cohort, then 23% and 19% in the last one. We do observe again that the historical progress in educational attainment, while remarkable among men, has been even more marked among women.

[Table 4 about here]

The general analysis displayed in Table 4 fully confirms that a reduction in inequality of educational opportunity occurred in French society. According to Models 2 and 3, the general strength of the origin-education association has declined by 29% for men, but 40% for women. And progress towards democratization of education has not been linear as most of the change occurred in the 1935-44 and 1945-54 cohorts, then largely leveled off for men and women born from the mid-1950s. We must underline that these results are strongly coherent with Prost’s historical research in the Orléans area (Prost, 1986) as well as previous publications in France (Thélot and Vallet, 2000; Vallet and Selz, 2007). Finally, as only initial schooling is considered, we would not have expected any age effect in Model 3 for either men or women. However, those that appear are only marginally significant and the Bic statistics that realizes the best compromise between parsimony and fit indeed selects Model 2, i.e., the model *without* age effect, for both

¹⁰ The range of the corresponding parameters is $0.122 - (-0.064) = 0.186$ for women, but $0.187 - (-0.097) = 0.284$ for men.

men and women. Moreover, the negative age estimates for the oldest group may be consistent with the declaration bias evoked above¹¹.

Change over cohorts in the relative occupational advantage afforded by education

Change over cohorts in the occupational returns to education, that is, a decline in the general strength of the association between level of education attained and class of destination, might well be a second phenomenon at the root of the increase in social fluidity over cohorts. A detailed examination of how destination class distributions, established separately for the different levels of education, have evolved along the XXth century essentially shows, for both men and women, that change over cohorts has been much less pronounced for the extreme categories – general elementary education on one hand, higher tertiary degree on the other hand – than for the intermediate categories – especially intermediate secondary qualification, upper secondary qualification, and lower tertiary degree. For those members of the recent cohorts who hold the latter diplomas, the probability of accessing the service class has strongly fallen while the probability of entering the working class – often the skilled fraction for men and the unskilled fraction for women – or the routine non-manual class – for women – has considerably increased. However, whether or not these declining returns to education in absolute terms have also resulted in declining returns in relative terms is here unclear.

[Table 5 about here]

The general analysis displayed in Table 5 clearly establishes that the association between level of education attained and class of destination has weakened over cohorts in French society, the decline beginning earlier among women – the 1925-34 cohort – than among men – the 1935-44 cohort – and being also more pronounced for the former than for the latter – a 45% decrease compared to a 25% decrease in the logged odds ratios, according to the estimations provided by the best model (Model 3). The same model also reveals a clear age effect, with a rather similar magnitude for men and women¹²: the association between level of education attained in initial schooling and class of destination tends to be weaker when the respondents are surveyed at an older age, i.e., at a more advanced stage of their occupational career.

The interaction between class of origin, class of destination and education

Finally, Table 6 presents a simple static analysis that demonstrates how the ‘direct’ effect of class of origin on class of destination – or their ‘net’ association – depends on the level of education attained. For men as well as for women, class of destination depends on both class of origin and education achieved, but much more on the latter variable than on the former one (Models 2, 3 and 4). And the fit of Model 4 is clearly improved by allowing the direct effect of class of origin to vary across education levels (Model 5). Generally speaking, the ascriptive effect is weaker when respondents have got more advanced education. Nearly monotonic among men, the log-multiplicative variation is indeed totally monotonic among women and it is once more clearly larger in the female part of the workforce – a reduction of 66% in the ascriptive effect, from general elementary education (1ab) to higher tertiary education (3b) – than in the male part – a reduction of 41%. This interaction, combined with the fact that the educational expansion has enlarged the

¹¹ Old people with low education disproportionately come from modest social backgrounds. If, in recent surveys, they tend to declare more education than they actually have, a weaker origin-education association should appear. This is what we observe with -0.077 for men and -0.109 for women.

¹² The range of the corresponding parameters is $0.136 - (-0.162) = 0.298$ for men, and $0.115 - (-0.166) = 0.281$ for women.

size of the more educated groups, creates a compositional effect that provides us with a third mechanism to explain the increase in social fluidity over cohorts in France¹³.

[Table 6 about here]

Revealing the contribution of the different mechanisms to the increase in social fluidity over cohorts

Following Breen (2010), we can now conclude our investigation with a simulation or counterfactual analysis that will reveal the role of the different mechanisms in creating greater societal openness over cohorts in France. We start from a two-equation path model for categorical variables (Goodman, 1973; Vermunt, 1997), named *Baseline*, that assumes that no variation related to the cohorts and the explanatory mechanisms has intervened: level of education only depends on class origin (equation 1); class of destination depends on birth cohort and it also depends on class origin, level of education attained and their interaction (equation 2)¹⁴. On the estimated COD table, we fit the Unidiff model in order to simulate the consequences of the *Baseline* hypotheses for change in social fluidity over cohorts. Then, a second model, named *Expand*, adds the CE association in the first equation, i.e., takes the educational expansion – and the associated compositional effect – into account. We again fit the Unidiff model on the estimated COD table in order to simulate the change in social fluidity that is only due to the educational expansion. A third model, named *Equalize*, adds the COE interaction in the first equation, i.e., takes the reduction in inequality of educational opportunity into account. Fitting again the Unidiff model on the estimated COD table will therefore reveal the *additional* variation in social fluidity that is due to democratization *per se*. It is now straightforward to go on with the same logic. On the basis of *EducReturn* that adds the CED interaction in the second equation, the additional variation in social fluidity that is due to change in the relative occupational advantage afforded by education will become visible. Then, *OriginReturn*, that adds the COD interaction in the second equation, will clarify the additional variation in social fluidity that is due to change in the direct effect of class origin on class destination. Finally, on the basis of *Saturated*, that adds CAO in the first equation and CAOD in the second one, we will be able to exactly reproduce the *observed* trends in social fluidity over cohorts that we have analyzed a few pages above.

[Figure 2 about here]

Figure 2 presents, in a synthetic way, the (Unidiff) trends in social fluidity over cohorts that are implied by the six, progressively complexified, models. Beginning with men, the graph is interpretable from the 1945-54 cohort onwards. In comparison to the 1906-24 cohort, the slight increase in social fluidity that characterizes the 1945-54 cohort is primarily a consequence of equalization of education – or democratization *per se* – and secondarily, with approximately the same contributions, a consequence of educational expansion and also change – here reduction – in the direct effect of class origin that has also increased social fluidity. Finally, change in the relative occupational advantage afforded by education has played no role at all, that is to say, the declining occupational returns to education had no influence on social fluidity, presumably because they affected men of all social origins rather uniformly.

¹³ A fourth mechanism has not been studied above, but will be directly examined in the final section: the fact that the direct effect of class of origin on class of destination might have varied over cohorts.

¹⁴ For reasons clarified in the previous sections, the model also includes age effects and interactions with age. In LEM syntax (Vermunt, 1997), it can formally be written as:

mod E|CAO {AOE}
 D|CAOE {CAD AOED}

The situation is different in the subsequent cohorts – 1955-64 and 1965-73. In these cohorts that experienced the generalization of access to the *classe de sixième* (Duru-Bellat and Kieffer, 2001), educational expansion and the associated compositional effect has become the dominant factor, and equalization of education the second one, in the explanation of change in social fluidity. Again, the decline in the returns to education has played no role at all, but change in the direct effect of class origin does have some relatively slight effect in the opposite direction, i.e., it has reduced the increase in social fluidity that would have been produced by educational expansion and equalization of education alone¹⁵. In a nutshell, democratization *per se* was the major explanation for increasing social fluidity in the 1945-54 cohort only, while educational expansion has become the major explanation in the 1955-64 and 1965-73 cohorts – a result which is again quite compatible with the work undertaken by the historian of education Antoine Prost.

These core results are reproduced when the same analysis is performed on the female sample: as explanatory factors, equalization of education dominates educational expansion in the 1945-54 cohort, but it is the reverse for the subsequent cohorts. However, some nuances are also visible as, in the female case, all four factors have contributed to the increase in social fluidity over cohorts. First, change in the occupational returns to education has a consistent, albeit modest, positive effect to explain increasing social fluidity while it played no role at all in the male analysis. Second, and more importantly, for all cohorts including the two last ones, change in the direct effect of class origin positively contributes to the increase in social fluidity. When writing these lines, we must admit that we have no convincing argument to offer for this discrepancy between the male and female analyses.

[Figure 3 about here]

Figure 3 reproduces the same investigation in a slightly different way. The six two-equation models are identical to those in the previous analysis, but trends in social fluidity are now estimated on the CAOD implied tables by imposing a Unidiff additive structure on cohort and age¹⁶. For both men and women, our previous comments about cohorts are fully confirmed and seem therefore robust. As regards the age variable, for both men and women, change over age groups clearly demonstrates that social fluidity increases along the occupational career. However, while, among men, the corresponding variation is at least as important as the variation in social fluidity between the oldest cohort and the youngest one, its magnitude is much reduced among women and far below the variation between cohorts. We regard this gender difference as reflecting the fact that women encounter more limited career opportunities than men on the labour market and also experience occupational lives that are more often interrupted than those of their male counterparts. Finally and reassuringly, we underline that change in social fluidity over age groups is little affected by the progressive incorporation of the different effects over cohorts in the simulated datasets.

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* *

In this chapter, we have assembled data from the 1970, 1977, 1985, 1993 and 2003 *Formation – Qualification Professionnelle* surveys – a series of surveys made by the French Statistical Office that are generally regarded as highly comparable across time and as a first-quality source for social mobility research – in order to systematically analyze how intergenerational class mobility and social fluidity has evolved in France for men and women belonging to cohorts born from the first decade of the XXth century to

¹⁵ A recent publication based on the same surveys, but quite different statistical methods, also finds that the ‘direct’ origin effect has strengthened in the most recent cohorts or the last decade observed (Bouchet-Valat, Peugny and Vallet, 2016).

¹⁶ See note 8 above.

the early 1970s. Over this long time span, origin class and destination class structures have been deeply transformed, merely as a consequence of economic change and the modernization of French society, and the distribution of educational attainment has been totally upset, even more so for women than for men, as a consequence of a considerable educational expansion. Absolute rates of social mobility have increased, both upwards and downwards. The inequality of educational opportunity has been somewhat reduced, though essentially in the cohorts born between the mid-1930s and the mid-1950s. But the absolute and relative occupational advantage afforded by education has also declined, at least from the same cohorts. However, according to our major result, recent cohorts are intergenerationally ‘more fluid’ than ancient cohorts, that is to say, the former experience a somewhat weaker association between class of origin and class of destination than the latter. Moreover, contrary to theses that were expressed at a time where less numerous data and less sophisticated statistical methods were available, and that we recalled in the introduction, educational change in its two components – educational expansion on the one hand, democratization *per se* on the other hand – has played a key role in the creation of increasing social fluidity or greater societal openness in France. However, democratization *per se* was the major factor in the 1945-54 cohort only, while educational expansion and the associated compositional effect subsequently became the dominant explanatory phenomenon. This certainly casts some doubts on the extent to which social fluidity will go on increasing steadily in more recent cohorts that we were unable to observe in this chapter. We would like to stress that the same analytical effort could probably be pursued with the 2014-2015 *Formation – Qualification Professionnelle* survey, and also the French Labour Force Survey series that has systematically collected data on intergenerational social mobility since the 1982 annual survey, in order to monitor progress – or regression – of social mobility and social fluidity within French society in the coming years. We must also qualify one of the conclusions of a previous contribution where, on the basis of the 1970 to 1993 surveys analyzed in a period – or survey – perspective, we saw the decline of the relative occupational advantage afforded by education as one of the factors, together with educational expansion and democratization, that explain the increase in social fluidity (Vallet, 2004). According to the cohort analysis we developed in this chapter, it has actually played a very minor role, probably because the decline in the occupational returns to education have affected men and women of the different class origins rather uniformly.

Notwithstanding the fact that the unequal spacing of the *Formation – Qualification Professionnelle* surveys and the constraints of the definition of the cohorts in the context of the comparative project have impeded a quite rigorous delimitation of age groups, another important result of this chapter is that social fluidity evolves with age – but suggestively less so for women than for men –, that is to say, the association between class of origin and class of destination is somewhat weaker when respondents are surveyed at an older age and, simultaneously, a more advanced stage of their occupational career. The same variation also applies to the association between level of education attained and class of destination. We see these results as a reflection of the various experiences, opportunities and disadvantages that the individuals may encounter during the course of their occupational life. Whatever the importance of the Origin-Education-Destination ‘triangle’, initial schooling does not ‘fix’ class of destination for ever. In French social mobility research, intragenerational mobility – or career mobility – has not been much analyzed in recent decades and this is certainly a domain that must be investigated again (Monso, 2006).

Finally, many of our analyses have demonstrated the existence of a more sustained change among women than among men. In comparison to women who were born in the recent cohorts, those who belong to the ancient cohorts more often experienced shorter occupational trajectories as well as careers that included more interruptions in relation with family events, so that the class of destination of women might well reflect an occupation held in the past – rather than at the date of the survey – disproportionately more in the ancient cohorts than in the recent ones. This might well have enlarged the extent of change that we were able to discover in our analyses on women. However, and more generally, we predominantly see this feature of our

results as a reflect of the profound transformations that the remarkable development of schooling among girls and young women, as well as their subsequent involvement on the labour market and their sustained participation in the workforce, have introduced in French society all along the XXth century.

REFERENCES

Albouy, V. and Wanecq, T. (2003) 'Les inégalités sociales d'accès aux grandes écoles', *Économie et Statistique*, 361, 27-47.

Baudelot, C. (1989) 'L'âge rend-il plus savant ? Un exemple de biais de réponse dans les enquêtes', in L'Hardy, P. et Thélot, C. (dir.), *Les ménages. Mélanges en l'honneur de Jacques Desabie*, Paris, INSEE, 159-173.

Baudelot, C. and Establet, E. (2000) *Avoir 30 ans en 1968 et en 1998*, Paris, Éditions du Seuil.

Baudelot, C. and Glaude, M. (1989) 'Les diplômés se dévaluent-ils en se multipliant ?', *Économie et Statistique*, 225, 3-16.

Baudelot, C. and Gollac, M. (1997) 'Le salaire du trentenaire : question d'âge ou de génération ?', *Économie et Statistique*, 304-305, 17-35.

Bouchet-Valat, M., Peugny, C. and Vallet, L.-A. (2016) 'Inequality of educational returns in France: changes in the effect of education and social background on occupational careers', in Bernardi, F. and Ballarino, G. (eds.), *Education, Occupation and Social Origin. A Comparative Analysis of the Transmission of Socio-Economic Inequalities*, Cheltenham, Northampton, Edward Elgar, 20-33.

Boudon, R. (1973) *L'inégalité des chances. La mobilité sociale dans les sociétés industrielles*, Paris, Armand Colin, 2^e éd. 1978.

Brauns, H. and Steinmann, S. (1999) 'Educational reform in France, West-Germany and the United Kingdom: updating the CASMIN educational classification', *ZUMA-Nachrichten*, 44, 7-44.

Breen, R. (2010) 'Educational expansion and social mobility in the twentieth century', *Social Forces*, 89, 365-388.

Chauvel, L. (1998a) 'La seconde explosion scolaire : diffusion des diplômes, structure sociale et valeur des titres', *Revue de l'OFCE*, 66, 5-36.

Chauvel, L. (1998b) *Le destin des générations. Structure sociale et cohortes en France au XX^e siècle*, Paris, Presses Universitaires de France, 2^e éd. revue et augmentée 2010.

Duru-Bellat, M. and Kieffer, A. (2001) 'The democratization of education in France: Controversy over a topical issue', *Population: An English Selection*, 13, 189-218.

Erikson, R. and Goldthorpe, J. H. (1992) *The Constant Flux: A Study of Class Mobility in Industrial Societies*, Oxford, Clarendon Press.

- Forgeot, G. and Gautié, J. (1997) 'Insertion professionnelle des jeunes et processus de déclassement', *Économie et Statistique*, 304-305, 53-74.
- Forsé, M. (1997) 'La diminution de l'inégalité des chances scolaires ne suffit pas à réduire l'inégalité des chances sociales', *Revue de l'OFCE*, 63, 229-239.
- Forsé, M. (2001) 'L'évolution des inégalités des chances sociales et scolaires en France au cours des quinze dernières années', in Boudon, R., Bulle, N. and Cherkaoui, M. (eds.), *École et société. Les paradoxes de la démocratie*, Paris, Presses Universitaires de France, 171-186.
- Girard, A. and Bastide, H. (1963) 'La stratification sociale et la démocratisation de l'enseignement', *Population*, 18, 435-472.
- Goodman, L. A. (1973) 'The analysis of multidimensional contingency tables when some variables are posterior to others: A modified path analysis approach', *Biometrika*, 60, 179-192.
- Goldthorpe, J. H. and Portocarero, L. (1981) 'La mobilité sociale en France, 1953-1970. Nouvel examen', *Revue française de sociologie*, 22, 151-166.
- Goux, D. and Maurin, É. (1997) 'Meritocracy and social heredity in France: some aspects and trends', *European Sociological Review*, 13, 159-177.
- Goux, D. and Maurin, É. (1998) 'From education to first job: the French case', in Shavit, Y. and Müller, W. (eds.), *From School to Work: A Comparative Study of Educational Qualifications and Occupational Destinations*, Oxford, Clarendon Press, 103-141.
- Ichou, M. and Vallet, L.-A. (2011) 'Do all roads lead to inequality? Trends in French upper secondary school analysed with four longitudinal surveys', *Oxford Review of Education*, 37, 167-194.
- Ichou, M. and Vallet, L.-A. (2013) 'Academic achievement, tracking decisions, and their relative contribution to educational inequalities: change over four decades in France', in Jackson, M. (ed.), *Determined to Succeed? Performance versus Choice in Educational Attainment*, Stanford, Stanford University Press, 116-148.
- Koubi, M. (2003) 'Les trajectoires professionnelles : une analyse par cohorte', *Économie et Statistique*, 369-370, 119-147.
- Merle, P. (2009) *La démocratisation de l'enseignement*, Paris, La Découverte.
- Ministère de l'Éducation nationale, de l'Enseignement supérieur et de la Recherche (2015) *L'état de l'Enseignement supérieur et de la Recherche en France*, 8, Paris.
(English version: <http://publication.enseignementsup-recherche.gouv.fr/ecsr/8EN/higher-education-and-research-in-france-facts-and-figures-8EN.php>)
- Monso, O. (2006) 'Changer de groupe social en cours de carrière. Davantage de mobilité depuis les années quatre-vingt', *Insee Première*, 1112.

- Nauze-Fichet, E. and Tomasini, M. (2002) 'Diplôme et insertion sur le marché du travail : approches socioprofessionnelle et salariale du déclassement', *Économie et Statistique*, 354, 21-43.
- Peugny, C. (2007) 'Éducation et mobilité sociale : la situation paradoxale des générations nées dans les années 1960', *Économie et Statistique*, 410, 23-45.
- Prost, A. (1968) *Histoire de l'enseignement en France : 1800-1967*, Paris, Armand Colin.
- Prost, A. (1981) *Histoire générale de l'enseignement et de l'éducation en France. Tome IV : l'École et la Famille dans une société en mutation (depuis 1930)*, 2^e édition 2004, Paris, Éditions Perrin.
- Prost, A. (1986) *L'enseignement s'est-il démocratisé ? Les élèves des lycées et collèges de l'agglomération d'Orléans de 1945 à 1980*, 2^e édition 1992, Paris, Presses Universitaires de France.
- Prost, A. (1992) *Éducation, société et politiques. Une histoire de l'enseignement en France, de 1945 à nos jours*, 2^e édition 1997, Paris, Éditions du Seuil.
- Thélot, C. (1976) 'Origine et position sociales : faits et interprétation', *Économie et Statistique*, 81-82, 73-88.
- Thélot, C. (1982) *Tel père, tel fils ? Position sociale et origine familiale*, Paris, Dunod.
- Thélot, C. and Vallet, L.-A. (2000) 'La réduction des inégalités sociales devant l'école depuis le début du siècle', *Économie et Statistique*, 334, 3-32.
- Vallet, L.-A. (1991) *La mobilité sociale des femmes en France. La participation des femmes aux processus de mobilité sociale intergénérationnelle*, Thèse de doctorat, Université de Paris-Sorbonne.
- Vallet, L.-A. (1999) 'Quarante années de mobilité sociale en France. L'évolution de la fluidité sociale à la lumière de modèles récents', *Revue française de sociologie*, 40, 5-64 [Vallet, L.-A. (2001) 'Forty years of social mobility in France. Change in social fluidity in the light of recent models', *Revue française de sociologie. An annual English selection*, 42, Supplement, 5-64].
- Vallet, L.-A. (2004) 'Change in intergenerational class mobility in France from the 1970s to the 1990s and its explanation: an analysis following the CASMIN approach', in Breen, R. (ed.), *Social Mobility in Europe*, Oxford, Oxford University Press, 115-147.
- Vallet, L.-A. (2014) 'Mobilité observée et fluidité sociale en France de 1977 à 2003', *Idées économiques et sociales*, 175, 6-17.
- Vallet, L.-A. and Selz, M. (2007) 'Évolution historique de l'inégalité des chances devant l'école : des méthodes et des résultats revisités', *Éducation et Formations*, 74, 65-74.
- Vermunt, J. K. (1997) *Log-Linear Models for Event Histories*, Thousand Oaks, Sage.
- Xie, Y. (1992) 'The log-multiplicative layer effect model for comparing mobility tables', *American Sociological Review*, 57, 380-395.

Table 1 – Observational design

(a) Age attained by each birth cohort in the different surveys

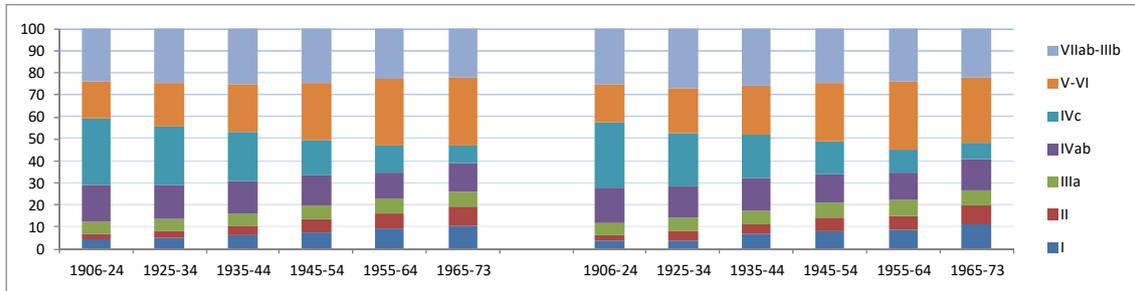
Cohort (C) / Survey (S)	1970	1977	1985	1993	2003
1906-24	46-64	53-64	61-64	-	-
1925-34	36-45	43-52	51-60	59-64	-
1935-44	30-35	33-42	41-50	49-58	59-64
1945-54	-	30-32	31-40	39-48	49-58
1955-64	-	-	30	30-38	39-48
1965-73	-	-	-	-	30-38

(b) Corresponding raw frequencies in the sample
(first figure for men, second figure in italics for women)

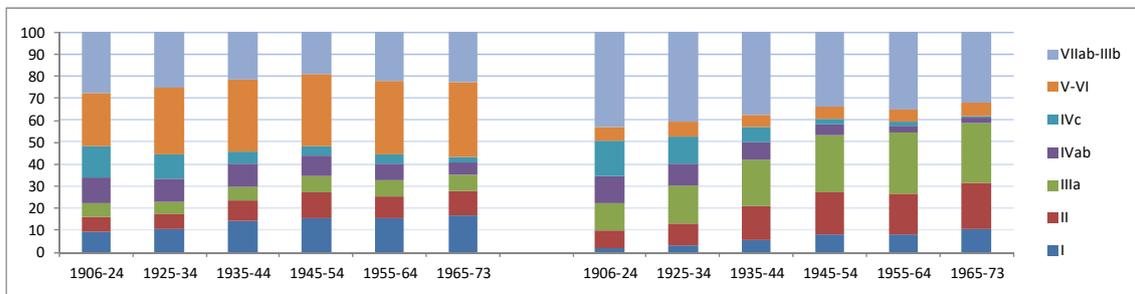
Cohort (C) / Survey (S)	1970	1977	1985	1993	2003	Total
1906-24	6 467 (3 200)	3 271 (1 961)	891 (596)	-	-	10 629 (5 757)
1925-34	5 300 (2 303)	4 632 (2 547)	3 405 (2 157)	822 (778)	-	14 159 (7 785)
1935-44	2 937 (1 243)	4 608 (2 641)	3 953 (2 484)	1 615 (1 528)	1 772 (1 763)	14 885 (9 659)
1945-54	-	2 118 (1 212)	6 123 (4 100)	2 245 (2 222)	4 052 (4 220)	14 538 (11 754)
1955-64	-	-	662 (472)	1 935 (1 891)	4 188 (4 495)	6 785 (6 858)
1965-73	-	-	-	-	3 805 (4 266)	3 805 (4 266)
Total	14 704 (6 746)	14 629 (8 361)	15 034 (9 809)	6 617 (6 419)	13 817 (14 744)	64 801 (46 079)

**Figure 1 – Trends over cohorts in the origin, destination and education distributions
(men on the left, women on the right)**

(a) Distribution of class origins



(b) Distribution of class destinations



(c) Distribution of education

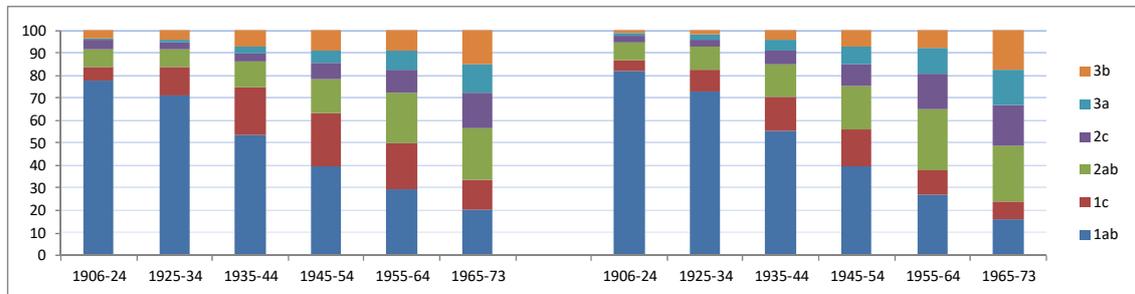


Table 2 – Absolute class mobility rates in the 1906-24 and 1965-73 cohorts

	Men		Women	
	1906-24 cohort (aged 46-64 in 1970)	1965-73 cohort (aged 30-38 in 2003)	1906-24 cohort (aged 46-64 in 1970)	1965-73 cohort (aged 30-38 in 2003)
N	6 467	3 805	3 200	4 266
Dissimilarity index	19.4	12.9	26.7	42.6
Total mobility rate	62.5	68.2	59.9	78.5
Total non vertical mobility	19.1	13.0	20.1	17.7
Total vertical mobility	43.4	55.2	39.9	60.8
Total upward mobility	31.4	34.0	20.0	32.2
Total downward mobility	11.9	21.2	19.9	28.6
Long-range upward mobility	4.0	4.2	1.9	5.3
Long-range downward mobility	0.6	2.4	0.7	2.6

The decomposition is based on the HI1 and HI2 hierarchy parameters associated with the seven-class schema (Erikson and Goldthorpe, 1992: 124), with an adaptation resulting from the distinction made between the two components (I and II) of the service class.

Table 3 – Change over cohorts in the Origin-Destination association

Model		G ²	df	p	Δ(%)	Bic
Men (N = 64 801)						
1.	CSO CSD OD	1147.06	684	.000	4.19	-6431.03
2.	CSO CSD β _C OD	1090.18	679	.000	4.04	-6432.52
	Difference 1-2	56.88	5	.000		
	β _C 1 (1906-24)	1.105 (.027)	1.030 (.026)	0.958 (.025)	0.961 (.030)	0.897 (.036)
3.	CSO CSD β _C β _A OD	1033.20	675	.000	3.93	-6445.18
	Difference 2-3	56.98	4	.000		
	β _C (deviation) 1 (1906-24)	+0.072	-0.029	-0.108	-0.089	-0.191
	β _A (deviation) 1 (middle)	-0.019 (old)	-0.097 (old+)	+0.073 (young)	+0.187 (young+)	
4.	CSO CSD β _C β _A β _S OD	1030.05	671	.000	3.92	-6404.01
	Difference 3-4	3.15	4	ns		
5.	CSO CSD β _C AOD	1020.85	665	.000	3.90	-6346.74
	Difference 3-5	12.35	10	ns		
Women (N = 46 079)						
1.	CSO CSD OD	1239.75	684	.000	5.06	-6105.12
2.	CSO CSD β _C OD	1091.44	679	.000	4.61	-6199.74
	Difference 1-2	148.31	5	.000		
	β _C 1 (1906-24)	0.966 (.031)	0.896 (.029)	0.790 (.027)	0.682 (.030)	0.666 (.035)
3.	CSO CSD β _C β _A OD	1063.67	675	.000	4.50	-6184.56
	Difference 2-3	27.77	4	.000		
	β _C (deviation) 1 (1906-24)	-0.057	-0.139	-0.251	-0.358	-0.419
	β _A (deviation) 1 (middle)	-0.024 (old)	-0.064 (old+)	+0.072 (young)	+0.122 (young+)	
4.	CSO CSD β _C β _A β _S OD	1060.00	671	.000	4.47	-6145.27
	Difference 3-4	3.67	4	ns		
5.	CSO CSD β _C AOD	1049.66	665	.000	4.41	-6091.18
	Difference 3-5	14.01	10	ns		

Table 4 – Change over cohorts in the Origin-Education association

Model		G ²	df	p	Δ(%)	Bic
Men (N = 64 801)						
1.	CSO CSE OE	1390.49	570	.000	4.52	-4924.58
2.	CSO CSE β _C OE	1201.60	565	.000	4.20	-5058.08
	Difference 1-2	188.89	5	.000		
	β _C 1 (1906-24)	1.031 (.034)		0.755 (.026)	0.718 (.030)	0.707 (.037)
3.	CSO CSE β _C β _A OE	1187.91	561	.000	4.19	-5027.45
	Difference 2-3	13.69	4	.008		
	β _C (deviation) 1 (1906-24)	+0.029	-0.113	-0.265	-0.289	-0.293
	β _A (deviation) 1 (middle)	+0.035 (old)	-0.077 (old+)	+0.003 (young)	+0.082 (young+)	
4.	CSO CSE β _C β _A β _S OE	1177.82	557	.000	4.18	-4993.23
	Difference 3-4	10.09	4	.039		
5.	CSO CSE β _C β _A OE	1165.98	551	.000	4.15	-4938.59
	Difference 3-5	21.93	10	.016		
Women (N = 46 079)						
1.	CSO CSE OE	1123.10	570	.000	4.78	-4997.62
2.	CSO CSE β _C OE	930.60	565	.000	4.32	-5136.43
	Difference 1-2	192.50	5	.000		
	β _C 1 (1906-24)	0.916 (.043)		0.626 (.028)	0.616 (.032)	0.600 (.035)
3.	CSO CSE β _C β _A OE	919.20	561	.000	4.28	-5104.88
	Difference 2-3	11.40	4	.022		
	β _C (deviation) 1 (1906-24)	-0.083	-0.190	-0.379	-0.384	-0.400
	β _A (deviation) 1 (middle)	+0.021 (old)	-0.109 (old+)	-0.004 (young)	-0.049 (young+)	
4.	CSO CSE β _C β _A β _S OE	913.93	557	.000	4.25	-5067.20
	Difference 3-4	5.27	4	ns		
5.	CSO CSE β _C β _A OE	911.16	551	.000	4.25	-5005.54
	Difference 3-5	8.04	10	ns		

Table 5 – Change over cohorts in the Education-Destination association

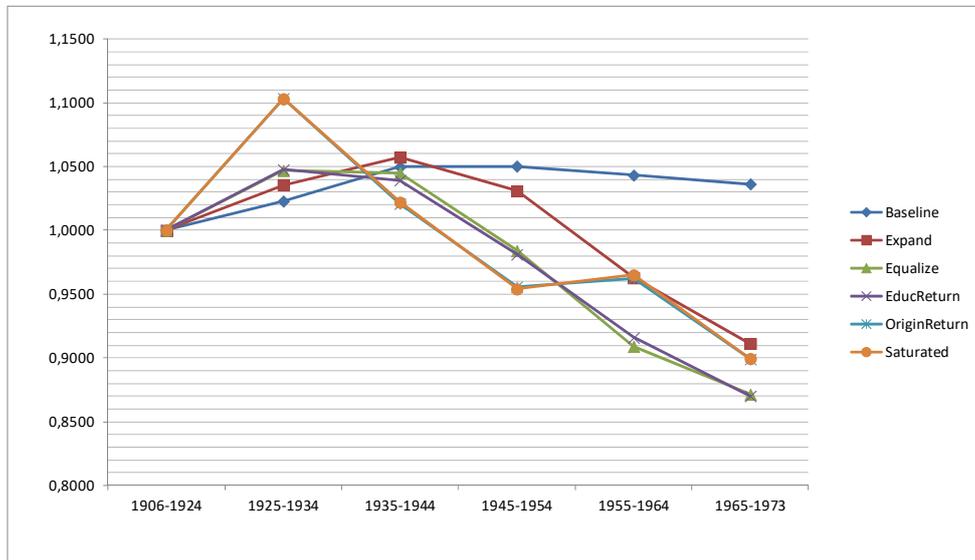
Model		G ²	df	p	Δ(%)	Bic
Men (N = 64 801)						
1.	CSE CSD ED	1534.80	570	.000	4.16	-4780.27
2.	CSE CSD β _C ED	1473.09	565	.000	3.98	-4786.59
	Difference 1-2	61.71	5	.000		
	β _C 1 (1906-24)	1.014 (.029)	0.937 (.026)	0.866 (.023)	0.888 (.028)	0.850 (.032)
3.	CSE CSD β _C β _A ED	1373.05	561	.000	3.79	-4842.31
	Difference 2-3	100.04	4	.000		
	β _C (deviation) 1 (1906-24)	-0.020	-0.107	-0.191	-0.172	-0.247
	β _A (deviation) 1 (middle)	-0.059 (old)	-0.162 (old+)	+0.071 (young)	+0.136 (young+)	
4.	CSE CSD β _C β _A β _S ED	1361.62	557	.000	3.72	-4809.42
	Difference 3-4	11.43	4	.022		
5.	CSE CSD β _C β _A ED	1356.34	551	.000	3.72	-4748.23
	Difference 3-5	16.71	10	.081		
Women (N = 46 079)						
1.	CSE CSD ED	1536.41	570	.000	5.17	-4584.31
2.	CSE CSD β _C ED	1309.58	565	.000	4.44	-4757.45
	Difference 1-2	226.83	5	.000		
	β _C 1 (1906-24)	0.896 (.033)	0.812 (.028)	0.722 (.024)	0.661 (.024)	0.636 (.026)
3.	CSE CSD β _C β _A ED	1177.37	561	.000	3.97	-4846.71
	Difference 2-3	132.21	4	.000		
	β _C (deviation) 1 (1906-24)	-0.119	-0.204	-0.307	-0.399	-0.448
	β _A (deviation) 1 (middle)	-0.098 (old)	-0.166 (old+)	+0.044 (young)	+0.115 (young+)	
4.	CSE CSD β _C β _A β _S ED	1174.18	557	.000	3.96	-4806.95
	Difference 3-4	3.19	4	ns		
5.	CSE CSD β _C β _A ED	1167.82	551	.000	3.96	-4748.88
	Difference 3-5	9.55	10	ns		

Table 6 – The interaction between Education, Class Origin and Class Destination

Model		G ²	df	p	Δ(%)	Bic	
Men (N = 64 801)							
1.	COE CD	45201.85	1476	.000	31.09	28849.13	
2.	COE CD OD	23437.83	1440	.000	19.61	7483.96	
3.	COE CD ED	16082.45	1446	.000	15.82	62.10	
4.	COE CD OD ED	2653.32	1410	.000	5.62	-12968.18	
5.	COE CD β _E OD ED	2579.14	1405	.000	5.54	-12986.96	
	Difference 4-5	74.18	5	.000			
	β _E	<i>1 (1ab)</i>	<i>0.913 (1c)</i>	<i>0.879 (2ab)</i>	<i>0.730 (2c)</i>	<i>0.774 (3a)</i>	<i>0.585 (3b)</i>
		<i>(.027)</i>	<i>(.029)</i>	<i>(.039)</i>	<i>(.060)</i>	<i>(.060)</i>	
Women (N = 46 079)							
1.	COE CD	34062.35	1476	.000	33.03	18212.89	
2.	COE CD OD	22318.64	1440	.000	25.09	6855.76	
3.	COE CD ED	8855.86	1446	.000	13.88	-6671.45	
4.	COE CD OD ED	2626.40	1410	.000	6.67	-12514.34	
5.	COE CD β _E OD ED	2443.93	1405	.000	6.32	-12643.12	
	Difference 4-5	182.47	5	.000			
	β _E	<i>1 (1ab)</i>	<i>0.883 (1c)</i>	<i>0.604 (2ab)</i>	<i>0.421 (2c)</i>	<i>0.385 (3a)</i>	<i>0.337 (3b)</i>
		<i>(.041)</i>	<i>(.037)</i>	<i>(.054)</i>	<i>(.070)</i>	<i>(.065)</i>	

Figure 2 – Contribution of the four mechanisms to the increase in social fluidity over cohorts (I)
 (The simulations are performed on the CAOED tables, i.e., allowing for age effects, and the trends in social fluidity are estimated on the fitted COD tables)

Men



Women

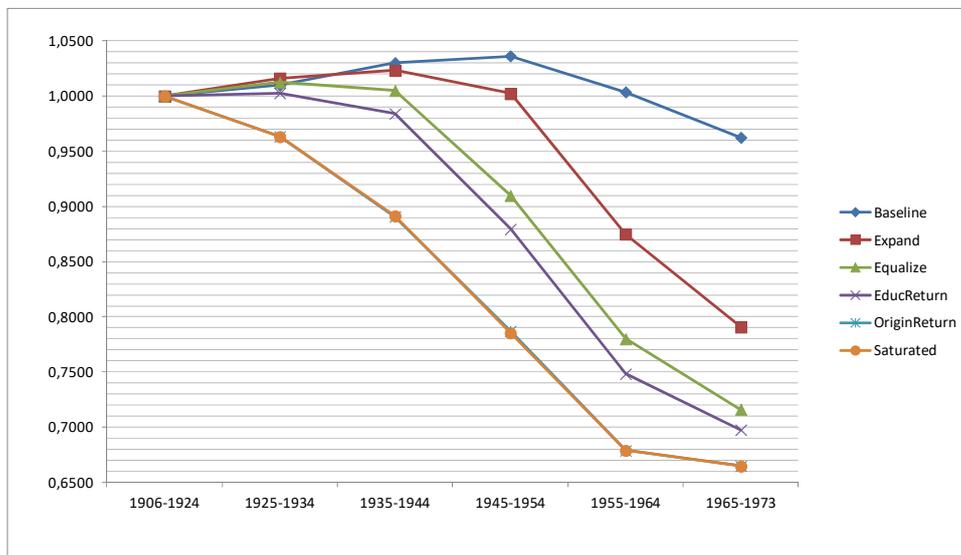
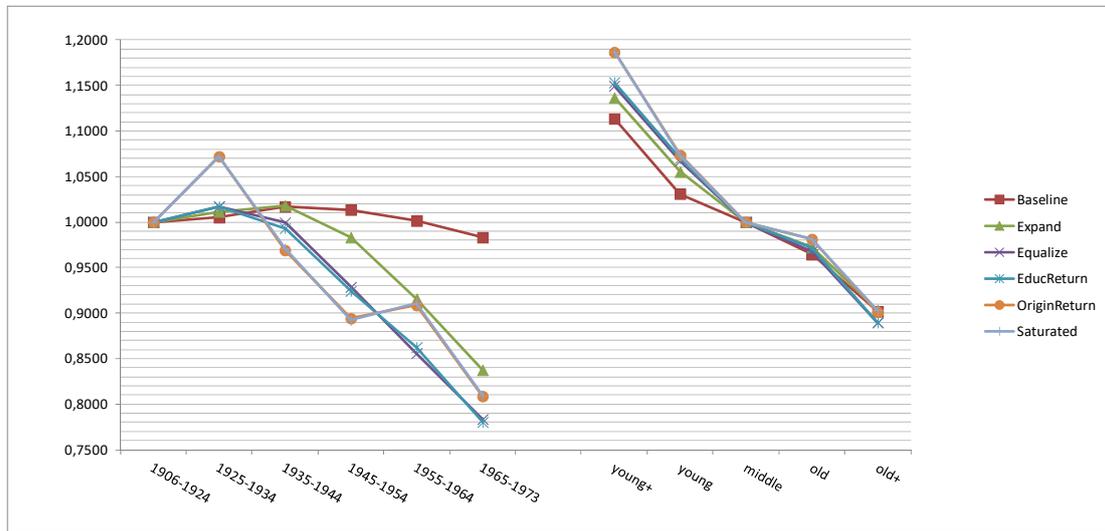


Figure 3 – Contribution of the four mechanisms to the increase in social fluidity over cohorts (II)

(The simulations are performed on the CAOED tables, i.e., allowing for age effects, and the trends in social fluidity are estimated on the fitted CAOD tables with an additive structure on cohort and age)

Men



Women

