Academic Achievement, Tracking Decisions, and Their Relative Contribution to Educational Inequalities

Change over Four Decades in France

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The development of mass postcompulsory education is a key feature of all economically developed societies, a feature that is all the more important given the central role of educational attainment in allocating individuals to class positions (Ishida, Müller, and Ridge 1995). Unfortunately, this quantitative expansion of education has not resulted in a substantial equalization of educational opportunities, as many had expected. Indeed, inequalities in educational attainment based on class, gender, and ethnicity still represent an important and well-established phenomenon (Shavit and Blossfeld 1993; Jonsson, Mills, and Müller 1996; Breen and Jonsson 2005; Duru-Bellat, Kieffer, and Reimer 2008).

In France an early study emphasized that there was little change in the pattern of association between social origins and educational certification from the onset of the 20th century to 1970 (Garnier and Raffalovich 1984). To some extent, this conclusion has been subsequently challenged on the basis of more numerous data and more powerful statistical methods. Smith and Garnier (1986) and then Thélot and Vallet (2000) demonstrated a notable decline among cohorts born in the 1940s in the strong association between father's occupation and highest degree obtained but a much less marked decrease in inequality in more recent cohorts. Indeed, most of the change occurred before, and seems to be independent of, the major secondary school reforms that were introduced in France from the late 1950s to the mid-1970s to promote equality of educational opportunity (Vallet 2004). However, if rather than considering highest degree obtained, the focus is instead on successful completion of upper secondary school, there is no doubt that the gap between social classes has diminished somewhat

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(Selz and Vallet 2006; Vallet and Selz 2007). In this context of a slightly decreasing association between class origin and educational attainment, the distinction popularized by Boudon (1974) between two fundamental causes of educational inequality remains an important analytic tool, which we apply to France in this chapter.

PRIMARY AND SECONDARY EFFECTS IN FRANCE: FROM CONCEPTUALIZATION TO EMPIRICAL INVESTIGATION

In his book *Education, Opportunity, and Social Inequality*, Raymond Boudon introduced the distinction between the "primary effects of stratification" and the "secondary effects of stratification" in the creation of educational inequality (1974, especially chap. 2). Primary effects are those expressed in the statistical association between children's class or social origin and their average level of academic performance or ability. Secondary effects are those that, at a given level of performance, are expressed in the actual choices and decisions that children, their parents, and the school make in the course of an educational career, especially at branching points. When he proposed this distinction in 1974,[1] Boudon took much of his inspiration from empirical results established by Girard and Bastide (1963) from the French Institut National d'Études Démographiques (INED). Indeed, Girard and Bastide clearly distinguished between "la *première cause* de la non-démocratisation: l'influence du milieu familial sur le développement de l'enfant et, par suite, sa réussite scolaire" and "la *seconde cause* de non-démocratisation: même à égalité de notes, la chance pour l'enfant d'entrer en sixième est en relation avec sa condition sociale" (437, 439, emphasis added).[2] Of course, Boudon developed a more detailed and analytic version of this distinction, which was part of a systematic theoretical ambition. Nevertheless, it is useful to bear in mind that this distinction has its roots in empirical findings derived from the first French large-scale longitudinal study focused on education: the 1962–1972 INED survey, which happens to be one of the empirical bases of this chapter.

It is also worth noting that Boudon was not the only famous French sociologist to use INED empirical research to develop and consolidate a theory of educational inequality. Bourdieu, as early as 1966, explicitly cited INED researchers Girard and Bastide (1963) and Clerc (1964) to show that class inequality in education was not reducible to differences in academic

performance. Bourdieu was well aware of the existence of what Boudon later called "secondary effects." Both authors differed only in their interpretation.[3] Therefore, 1960s INED researchers, perhaps more so than Boudon or Bourdieu, should be credited for shedding light on primary and secondary effects as key methodological notions in the study of educational inequality.

The distinction between primary and secondary effects, though influential in the field of social stratification and mobility (Goldthorpe 1996a; Breen and Goldthorpe 1997), has not been applied very often in empirical research on education, as Nash (2006) rightly noted. The absence is even more conspicuous in France, where although inspired by evidence on the French school system and created by a French sociologist, the distinction has almost been nonexistent. One notable exception is the work of Duru-Bellat and her colleagues, in which the authors employed logistic regression models to estimate the relative importance of primary and secondary effects of social stratification in creating educational inequality during compulsory schooling (Duru-Bellat, Jarousse, and Mingat 1993; Duru-Bellat 1996). Using a sample of 2,352 pupils from 17 Burgundian high schools in the early 1980s, they found that, in the transition from lower to upper secondary school, academic performance accounted for about 53.5 percent of the differential between children of manual workers and those from the upper service class, while secondary effects explained the remaining 46.5 percent (Duru-Bellat, Jarousse, and Mingat 1993, 52).[4]

Until recently, a major limitation of all scientific attempts to empirically assess the share of primary and secondary effects has been the lack of a convincing and effective statistical method. Decomposing primary (or indirect via academic performance) effects and secondary (or direct) effects of social background is feasible and relatively simple in linear regression models because, in this instance, the total effect is the exact sum of the primary and secondary effects (Alwin and Hauser 1975). This is, however, much more complicated in the context of models for categorical dependent variables, such as school tracks. This chapter aims to demonstrate the usefulness of Boudon's distinction by using the method described in Chapter 2 (see Erikson and Jonsson 1996; Erikson et al. 2005; Jackson et al. 2007), as well as recent alternative techniques, to analyze educational inequalities in France from a historical perspective. Two periods are studied, which correspond to five school transitions. We first describe the French school system during

the two periods under study, namely, the 1960s and the late 1990s to early 2000s, and then describe the data and methods. Results are presented and finally discussed.

This chapter empirically investigates the primary and secondary effects of social stratification in creating educational differentials for two cohorts of pupils: the first is composed of students born around 1951; the second is composed of pupils who were born around 1984.[5] These two cohorts were differently affected by educational inequalities within two very different institutional configurations of the French school system. Comparing educational inequalities across two cohorts faced with these different institutional configurations is potentially problematic (Sartori 1991), and inequalities should not be directly compared between the cohorts without being put back into the context in which they occur (Maurice 1989). Specifically, inequality in educational opportunity cannot be studied without looking at the institutional constraints (supply-side) that influence the educational decisions of families (demand-side) (Prost 1992).

In the 1960s the French school system was still organized in a strongly tracked way and was characterized by rather elitist functioning. Since the 19th century, two distinct types of schooling had existed: on the one hand, the classical track leading its overwhelmingly upper-class pupils to the academic upper secondary *lycée*, to the *baccalauréat*, and in some cases, to higher education. On the other hand, postprimary classes confined working-class pupils to shorter vocational schools. Logically, these two closed schooling tracks channeled pupils toward unequal class positions. Thus, until the late 1950s, the school system was not organized to fight against social inequalities but rather to correspond to them (Prost 1997). The post-1950s period coincided with a dramatic expansion of secondary schooling, which stemmed from both a rise in the social demand for education and a political will to train more skilled workers. The age of compulsory schooling was raised from 14 to 16 in 1959 for pupils born from 1953 onward. The move toward a unified comprehensive school system was just beginning, and it reached its height with the *Collège unique* Act of 1975. The first cohort under study, which entered lower secondary school in 1962,
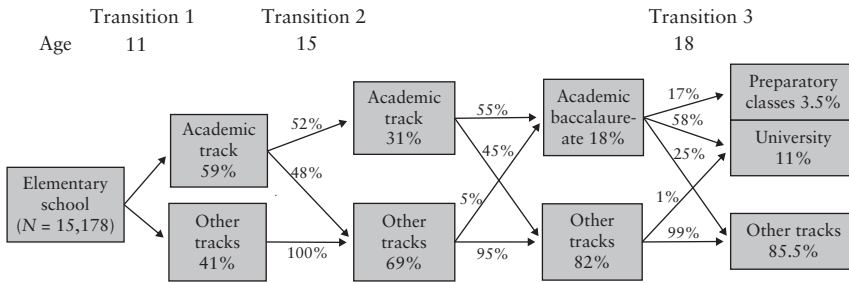
Figure 5.1.   Important educational pathways through the stylized French educational system, 1962 to 1972 (1951 cohort)

s o u r c e : 1962–1972 INED survey; our calculations.

n o t e : Percentages in boxes are of entire cohort; percentages in lines between boxes are transition rates of each group.

experienced the French educational system at the beginning of this era of reforms. In the 1960s the two-tier system was still formally in place, but differences between the classical upper-class type of schools (*lycée*) and the shorter working-class courses (*cours complémentaire* and *collège d'enseignement général*) had progressively diminished in administrative as well as pedagogical terms (Lelièvre 1990). Most importantly, access to the academic track of upper secondary school, leading to the *baccalauréat*, was no longer restricted to pupils coming from the first type of school.

For the 1951 cohort considered here, there were three main branching points through the educational system. As Figure 5.1 shows, only 59 percent of pupils attending the final year of elementary school gained access to the academic track of lower secondary school (transition 1, at age 11),[6] which enabled them to continue toward the second transition. At transition 2, at age 15, of pupils who had successfully made transition 1, 52 percent were admitted to the academic track of upper secondary school. They constituted 31 percent of the cohort. Of these, 55 percent passed their academic-oriented school-leaving certificate (*baccalauréat général*), which was a requirement to apply to higher education. At transition 3 (age 18), three-quarters of these *baccalauréat général* holders entered academic higher education, that is, university (58 percent) or preparatory classes to elite schools (*classes préparatoires aux grandes écoles*) (17 percent). On the whole, the system was very selective at each stage and only a tiny proportion of a generation attained higher education.
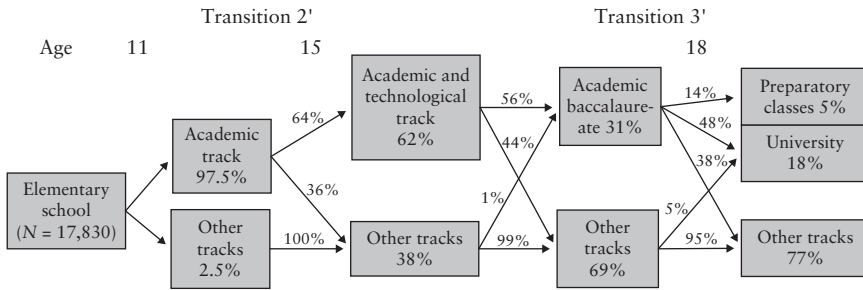
Figure 5.2. Important educational pathways through the stylized French educational system, 1995 to 2006 (1984 cohort)

s o u r c e : 1995–2006 Ministry of Education Panel study; our calculations.

The situation is completely different for the 1984 cohort moving through the education system in the 1990s and 2000s, a system that is now far more unified and massified. The transition between elementary and lower secondary school turns out to be virtually automatic for all pupils (Brauns and Steinmann 1999), corresponding to a transition rate of 97.5 percent in our data (see Figure 5.2). After the 1975 act, lower secondary school (*collège*) progressively became an undifferentiated four-year middle school. At age 15, transition 2′ to upper secondary school is the first real branching point in the present-day French educational system. At the end of *collège*, institutional diversification between different tracks begins. On the basis of their family preferences and their level of academic achievement, pupils are allocated to the academic and technological *lycée*, on the one hand, or to other tracks, especially the vocational *lycée*, on the other. In fact, 62 percent of pupils are channeled into the former, while the rest go to other tracks. Three years—or more if they repeat a class—after entering upper secondary school, pupils take a final examination, the *baccalauréat*, that corresponds to the type of curriculum that they followed. Three types of *baccalauréat* exist: vocational, technological, and academic. Fifty-six percent of pupils who attended the academic and technological *lycée* passed the academic *baccalauréat*. Each type of *baccalauréat* formally grants access to higher education (transition 3′, at age 18). In reality, only 5 percent of pupils who do not hold an academic *baccalauréat* enter university, while 48 percent of academic *baccalauréat* holders do so; in addition, 14 percent of them are accepted in preparatory classes to elite schools.

DATA, VARIABLES, AND METHODS

We present evidence from two large-scale longitudinal datasets, the only datasets in France that are available for such an analysis. Fieldwork for the first survey was conducted between the 1961–1962 and 1971–1972 school years by the French Institut National d'Études Démographiques. A nationally representative sample of 17,461 pupils, born around 1951, who attended the last class of elementary school in June 1962 was selected through a complex sampling design and followed for 10 years. At the last point of observation, in September 1971, the attrition rate was as low as 10.6 percent and socially unbiased (Girard and Bastide 1973, 573, table A). Information on pupils, their school trajectories, their families, and their schools was collected annually through postal questionnaires sent to pupils' schools and parents. The data allow us to study the three main school transitions of that time: the transition from elementary to secondary school (transition 1, at age 11), the transition from lower to upper secondary school (transition 2, at age 15) and the transition from upper secondary to higher education (transition 3, at age 18).

The second database is a panel study carried out by the French Ministry of Education between 1995 and 2006. A representative sample of 17,830 individuals was randomly selected from all pupils, born around 1984, who entered lower secondary school for the first time in September 1995. They were followed up within and after secondary school. Attrition over the course of the 1995–2006 panel survey is low and without substantial social bias (INSEE 2006). Not only pupils but also heads of schools and parents participated in the survey through mail and telephone questionnaires. For the 1984 cohort, the two essential branching points to be analyzed are the transition from lower to upper secondary school (transition 2′, at age 15), and the transition from upper secondary school to higher education (transition 3′, at age 18). The core method and variables used here are similar to those employed in the other chapters of this book (see Chapter 2 for a discussion of the method). We build the variables as follows.

Parental Class and Education

For the 1951 cohort, the occupation of the head of the household, most usually the father, was precisely recorded. For sake of comparability, both between the two cohorts studied and with other chapters in this book,

we recoded this variable into three categories following the Erikson-Goldthorpe-Portocarero (EGP) class schema. What is referred to as the "salariat" corresponds to EGP classes I and II; the "intermediate class" corresponds to EGP classes III, IV, and V; and the "working class" corresponds to classes VI and VII. Although widely recognized as a key independent variable in educational research, parental educational attainment was unfortunately not included in the 1962–1972 INED survey.

For the 1984 cohort, we have precise information on both mother's and father's occupation, but for comparative purposes we use data only on the occupation of the head of the household. This variable was recoded into three categories exactly as mentioned above. Data on both parents' levels of education are also available in the 1995 panel study. We recode the parents' highest level of educational attainment into three categories, labeled as follows: "low" corresponds to parents who, at best, completed elementary school; "medium" corresponds to parents who left school between the end of lower and upper secondary education; and "high" corresponds to pupils whose parents obtained any university degree.

Ethnicity

In the 1962 INED survey, we were able to measure ethnicity only through a remote proxy: pupil's citizenship, contrasting French to foreign children. In the 1995 panel study, in addition to pupil's citizenship that we use when comparing with the former survey, we derived our information on ethnicity from a far more precise source, mother's and father's country of birth. We first cross-classified mother's and father's country of birth, but because of low frequencies, we recoded the ensuing variable into seven categories: both parents born in (1) France, (2) the rest of Europe, (3) North Africa, (4) the rest of Africa, (5) Turkey, (6) the rest of the world, and (7) parents from mixed origins.

Academic Performance Scores

For the 1951 cohort, no perfectly standardized test score is available. The academic level of pupils is individually assessed by the teacher on a five-point scale (excellent, good, average, below average, and bad) during each school year immediately preceding a transition. However, the last such assessment was made in the 1968–1969 school year. At that time, only half the pupils were present in the final class of upper secondary school to undergo

the final transition. The remaining half had repeated one or two classes in their school career and, thus, approached this transition one or two years later. As a consequence, for these pupils the academic performance variable corresponding to transition 3 was recorded one or two years before they experienced the transition.

For the 1984 cohort, we have information on test scores, which are reliable quantitative indicators of demonstrated academic ability. For transition 2′, from lower to upper secondary school, the raw performance variable consists of the sum of the grades obtained during the school year in mathematics and French, both subjects having the same weight. As a consequence, some of the variation in grades may be due to not only variation in individual ability but also to the school and class contexts. In the absence of any other better proxy of demonstrated ability, we do, however, think that this variable is a solid indicator. For transition 3′, from upper secondary school to higher education, the performance variable is derived from the average grade obtained at a nationally homogeneous examination, the academic *baccalauréat*. At transition 2′ and before standardization, the grades range from 0.75 to 19.5 out of 20, with a mean of 10.95 and standard deviation of 2.77. For transition 3′, the grades range from 1.55 to 18.39, with a mean of 11.30 and standard deviation of 1.82. For both cohorts, all the performance variables were transformed into *z* scores with a mean of 0 and a standard deviation of 1 to allow comparability.

Track Variables

At transition 1, only pupils who attended the final year of elementary school (*Cours Moyen* 2, or equivalently *septième*) in 1961–1962 were included in the analysis. The academic track of lower secondary school contains all classes defined as *6e* (6th grade), whether they are part of a public or private school, purely academic or more technical, because all of them formally allow the possibility of continuing in education until the end of lower secondary school. Then, pupils did not reach the end of lower secondary school (*3e*, or 9th grade) at the same time: 47.8 percent reached it four years after 6th grade, that is, in 1965–1966; 42.4 percent repeated one year and attended *3e* in 1966–1967; and 9.8 percent repeated twice and thus spent six years in lower secondary school. All pupils who reach 9th grade face transition 2. The academic track of upper secondary school corresponds to *2nde* (10th grade), either in a private or public school. Finally, at transi-

tion 3, all pupils who reached the end of upper secondary school and who took and passed an academic baccalaureate (*baccalauréat général*) between school years 1968–1969 and 1970–1971 are taken into account. The academic track of higher education comprises all types of *classes préparatoires aux grandes écoles* (selective two- or three-year preparatory classes to elite graduate schools) and undergraduate studies in humanities, sciences, law, and medicine (*lettres*, *sciences*, *droit*, and *médecine*) in universities. As discussed below, we distinguished both types of tracks in most analyses. When studying the transition to university, we excluded pupils who were admitted to preparatory classes; symmetrically, when studying the transition to the latter track, we excluded pupils who entered university (see Table 5.2 note).

For the 1984 cohort, pupils who reached *3e* in 1998–1999 (71.4 percent), in 1999–2000 (26.3 percent), and in 2000–2001 (2.2 percent) are included in the analysis of transition 2′. The academic track of upper secondary school corresponds to what is called *2nde générale et technologique* (academic and technological 10th grade), as opposed to entering vocational tracks or leaving school. If pupils took and passed a *baccalauréat général* between 2002 and 2006, they are considered for the analyses related to transition 3′. The academic track of higher education includes the same two types of tracks as in transition 3.

The decomposition of the primary and secondary effects of class stratification in historical perspective is the aim of this chapter. We will now present results pertaining to this central issue before we expand on further results regarding the role of parental education, gender, and ethnicity.

FROM SECONDARY TO PRIMARY EFFECTS OF CLASS:
THE HISTORY OF EDUCATIONAL INEQUALITIES
IN FRANCE REVISITED

Total Class Inequality

The total level of class inequality needs to be precisely assessed before we move on to measure the relative importance of primary and secondary effects. Figures 5.3 and 5.4 display observed transition rates of pupils from each social class for the three historical and the two contemporary transitions.

In the 1951 cohort, sharp class differentials exist at each level of the school system. For pupils from the salariat, the transition rates are always
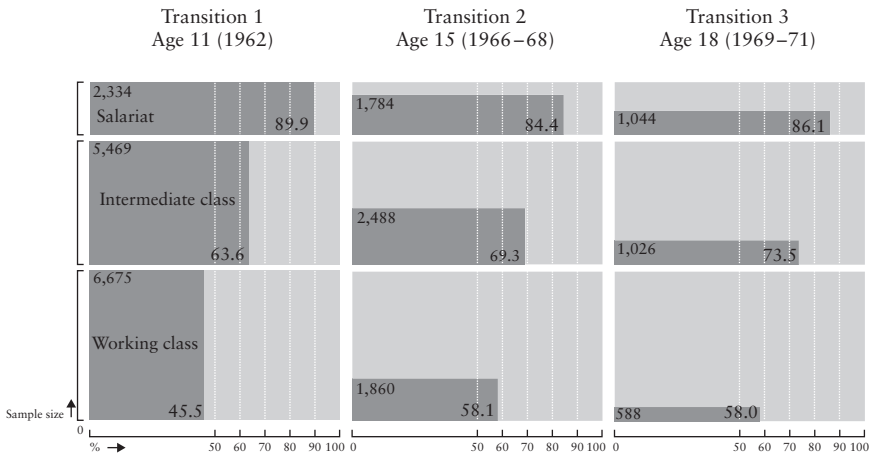
Figure 5.3. Transition rates showing class inequality at each transition (1951 cohort)

s o u r c e : 1962–1972 INED survey; our calculations.

n o t e : The horizontal width of the rectangles is proportional to the transition rates. The vertical height of the rectangles corresponds to the numerical proportion of each class.

Figure 5.4. Transition rates showing class inequality at each transition (1984 cohort)

s o u r c e : 1995–2006 Ministry of Education Panel study; our calculations.

n o t e : The horizontal width of the rectangles is proportional to the transition rates. The vertical height of the rectangles corresponds to the numerical proportion of each class.
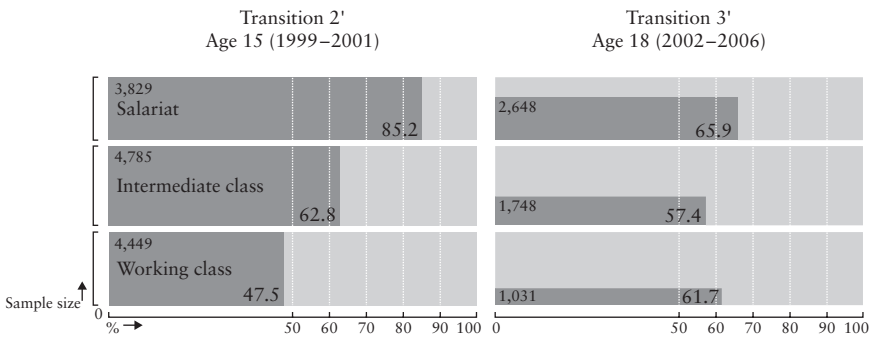
around 85–90 percent, while they never exceed 60 percent for their working-class counterparts (see the horizontal axis of Figure 5.3). Both because of these lower transition rates and because of higher dropout rates between branching points, the total number of working-class pupils surviving in the educational system dramatically decreases from one transition to the next (see the vertical axis of Figure 5.3). By contrast, higher transition rates and lower dropout rates mean that the population of salariat pupils decreases much less in size from the first to the last transition. From the end of elementary school to higher education, each branching point reinforces previous class inequality to eliminate most working-class pupils from the educational system. Considerable inequalities are still at play in contemporary France, that is, for the 1984 cohort, but their magnitude has decreased (see Figure 5.4). At transition 3′ especially, the transition rates for the three classes move closer to one another. The transition rate of working-class pupils even exceeds the rate of their intermediate-class counterparts.

As does the remainder of the chapter, Figures 5.3 and 5.4 address transition-specific class inequality, that is, only for pupils at risk of making the transition. However, if we do not condition on whether pupils made the previous transition and we thus examine the whole sample of students, the odds of attaining the academic track of upper secondary school are 10.2 times higher for salariat than for working-class pupils in the 1951 cohort, compared with an odds ratio of 6.6 in the 1984 cohort. These odds ratios are respectively 12.0 and 4.3 when we consider the transition to the academic track of higher education.

In both periods, the academic track of higher education (transitions 3 and 3′) is characterized by a dual structure, distinguishing university from elite preparatory classes. These alternatives are not equally selective. Indeed, for those in the 1951 cohort who achieved an academic *baccalauréat*, the transition rate to university was as high as 62.9 percent and 46.6 percent for salariat and working-class children, respectively. These rates fall to only 23.2 percent and 11.3 percent if we consider *classes préparatoires*. In the present-day school system, that is, for the 1984 cohort, preparatory classes are still very socially selective and prized: the transition rates of salariat and working-class pupils are 20.3 percent and 6.7 percent, respectively. Most strikingly, beside these tracks of excellence, the social selectivity of university has reversed. Working-class pupils' transition rate (55.0 percent) stands *above* that of their salariat schoolmates (45.7 percent). This constitutes a

key point in the understanding of the French contemporary field of higher education. Many upper-class parents would now advise their offspring *not* to enroll in traditional public universities, except to study law or medicine, while these universities still attract most working-class pupils who hold an academic *baccalauréat*. By contrast, the parallel preparatory-classes system is highly prized by upper-class families, because it prepares students for the very selective *grandes écoles*, which in turn likely grant them access to well-paid managerial and professional positions in the labor market. On the whole, there has been a clear, and likely growing, academic and social hierarchy between mass universities and elite *classes préparatoires aux grandes écoles*. This type of horizontal inequality within a given level of education is an essential feature of inequality in France (on inequality at the end of upper secondary school, see Ichou and Vallet 2011). To render this hierarchy, university and preparatory classes are distinguished in the analyses below.

On the whole, these descriptive statistics clearly show that overall class inequality, though decreasing, is still large enough for us to decompose the inequalities into primary and secondary effects.

Class Differentials in Academic Performance

Table 5.1 presents the average level of academic performance for each class and for each transition. In the three historical transitions, faced by the 1951 birth cohort, the ranking of test scores systematically corresponds to the social ladder. On average, salariat pupils have better school results than intermediate-class children, who in turn outperform pupils from the working class. The other conspicuous trend is the dramatic reduction in the performance gap over the course of pupils' educational careers. The difference between the mean score of salariat and working-class pupils is 10 times higher at the end of elementary school (0.614) than at the end of upper secondary school (0.062). At this stage, class differences in performance have almost disappeared. In terms of academic performance, and compared to the difference between classes at the end of elementary school, working-class pupils who have stayed in education until the end of upper secondary school are indeed far less different from their upper-class classmates.

Once again, in contemporary France (the 1984 cohort) the academic and social hierarchies closely parallel one another, as Table 5.1 also shows. But in contrast to the earlier cohort, the performance gap between classes is much wider now than it was 40 years ago at the end of both lower (0.675

TABLE 5.1

*Means of standardized test scores at each transition by class in the 1951
and 1984 cohorts*

Class	Mean	N	Mean	N	Mean	N
			1951 COHORT			
	TRANSITION 1: AGE 11 (1962)		TRANSITION 2: AGE 15 (1966–1968)		TRANSITION 3: AGE 18 (1969–1971)	
Salariat	0.426	2,334	0.075	1,784	0.028	1,044
Intermediate	0.047	5,469	−0.012	2,488	−0.009	1,026
Working	−0.188	6,675	−0.056	1,860	−0.034	588
Total	0	14,478	0	6,132	0	2,658
Salariat/ working gap	0.614		0.131		0.062	
			1984 COHORT			
			TRANSITION 2′: AGE 15 (1999–2001)		TRANSITION 3′: AGE 18 (2002–2006)	
Salariat			0.383	3,829	0.163	2,648
Intermediate			−0.034	4,785	−0.120	1,748
Working			−0.292	4,449	−0.214	1,031
Total			0	13,063	0	5,427
Salariat/ working gap			0.675		0.377	

SOURCE: 1962–1972 INED survey and 1995–2006 Ministry of Education Panel Study; our
calculations.

versus 0.131) and upper (0.377 versus 0.062) secondary schools.[7] Finally,
the performance gap between classes is strikingly similar when the whole
population of pupils is considered, that is, at the *very first* transition each
cohort experienced: 0.675 at age 15 in the 1984 cohort compared to 0.614
in the 1951 cohort at age 11.

Relative Importance of Primary and Secondary Effects

The panels of Table 5.2 are of key importance since they show, for each
transition, the estimated transition rates for real and synthesized combina-
tions of academic performance and transition propensities, which are at the
heart of the method described in Chapter 2. Let us examine transition 1 un-
dergone by the 1951 cohort at age 11, focusing on the two extreme classes
(first panel of Table 5.2). Pupils from the salariat, with their actual level of
performance and their specific transition propensity given performance,
have an estimated transition rate of 91.1 percent, which is quite close to the

TABLE 5.2
Estimated factual and synthesized transition rates (%) for the 1951 cohort

Perfor-mance	TRANSITION 1 AGE 11 (1962)			TRANSITION 2 AGE 15 (1966–1968)			TRANSITION 3[a] AGE 18 (1969–1971)			TRANSITION 3[b] AGE 18 (1969–1971)		
	Decision											
	S	I	W	S	I	W	S	I	W	S	I	W
S	91.1	74.0	63.1	85.0	70.3	59.9	82.2	69.0	52.5	62.5	36.0	23.2
I	85.2	63.3	51.5	84.0	69.2	58.7	82.2	69.0	52.5	61.4	34.5	22.2
W	81.0	56.6	44.6	83.6	68.7	58.0	81.6	69.0	52.5	59.5	32.6	21.1

SOURCE: 1962–1972 INED survey; our calculations.

NOTE: Within each panel of the table, academic performance is fixed in a given row and transition propensity is fixed in a given column. The diagonal figures represent real combinations (i.e., performance and transition propensity measured for the same class), while off-diagonal cells contain synthesized combinations (performance and transition propensity of two different classes). S = salariat; I = intermediate class; W = working class.

[a]In this panel, we compare pupils who entered university to pupils who were channeled into all other tracks *excluding those who were accepted in preparatory classes*. We do this to reduce the heterogeneity of the other tracks category, which would have been extremely diverse had it brought together elite preparatory classes, short vocational studies, and dropouts. For this reason, the estimated real transition rates differ from the transition rates to university described in the previous section on total class inequality.

[b]In this panel, we compare pupils who entered preparatory classes to pupils who went into other tracks *excluding those who entered university*. See above for an explanation.

observed rate (89.9 percent). For working-class children, this real combination of their two actual attributes generates an estimated transition rate of 44.6 percent—close to the observed 45.5 percent. The real analytic value of these tables is related to their off-diagonal cells, which alone encompass the most distinctive feature of the method: counterfactual reasoning. In transition 1, if salariat pupils kept their real transition propensity but had the academic performance distribution of working-class pupils, their transition rate would be 81.0 percent, lower than the actual salariat rate. If the salariat level of academic performance is now combined with the transition propensity of working-class pupils, the estimated transition rate is even lower, reaching only 63.1 percent.

As can be inferred from the previous description, all vertical differences in transition rates arise from variations in academic performance, that is, primary effects. In comparison, horizontal contrasts stem only from differences in transition propensities controlling for performance, that is, secondary effects. This allows us to quickly interpret each one of the four tables. In creating class differentials in transition 1 (1951 cohort at age 11),

Table 5.3

Estimated factual and synthesized transition rates (%) for the 1984 cohort

Performance	TRANSITION 2' AGE 15 (1999–2001)			TRANSITION 3'a AGE 18 (2002–2006)			TRANSITION 3'b AGE 18 (2002–2006)		
				Decision					
	S	I	W	S	I	W	S	I	W
S	85.9	74.9	68.4	57.1	53.7	59.4	37.7	28.5	25.2
I	75.8	63.2	55.6	56.7	52.8	58.9	26.6	18.0	15.9
W	68.3	55.3	47.5	56.5	52.4	58.7	24.3	15.8	14.0

SOURCE: 1995–2006 Ministry of Education Panel Study; our calculations.

NOTE: Within each panel of the table, academic performance is fixed in a given row and transition propensity is fixed in a given column. The diagonal figures represent real combinations (i.e., performance and transition propensity measured for the same class), while off-diagonal cells contain synthesized combinations (performance and transition propensity of two different classes). S = salariat; I = intermediate class; W = working class.

[a]See Table 5.2 note a.

[b]See Table 5.2 note b.

secondary effects are more consequential than primary effects, because the horizontal differences are greater than the vertical ones. This is even truer for transition 2 (1951 cohort at age 15), where the horizontal differences, created by differences in transition propensities, are much wider than the vertical differences, created by differences in academic performance (see the second panel of Table 5.2). In transition 3 (1951 cohort at age 18), whether university or *classes préparatoires* are considered, primary effects virtually disappear and inequality is almost entirely created by secondary effects (see the final two panels).

Four decades later, the situation has changed. At transition 2′ (1984 cohort at age 15, see the first panel of Table 5.3), primary and secondary effects appear to have the same magnitude. In the two extreme off-diagonal cells, the estimated transition rates of both counterfactual combinations are indeed similar (68.3 percent and 68.4 percent). At transition 3′ (1984 cohort at age 18), figures related to university (second panel) and those linked to preparatory classes (third panel) tell a different story. In the first case, the overall differential between salariat and working-class pupils appears to be too small to be decomposed into primary and secondary effects. However, comparing the rates of intermediate-class children to those of the two other classes points to the influence of secondary effects. In the case of *classes préparatoires*, both types of effects seem to have a roughly similar weight in accounting for the higher transition rate of salariat pupils. On the whole,

the share of primary effects in determining overall inequalities appears to be much larger in contemporary France than for the 1951 cohort.

By transforming the previous estimated rates into odds and following the method described in Chapter 2, we are now able to precisely assess the relative importance of primary and secondary effects at each of the five transitions (Table 5.4). To improve the robustness of the overall picture, we also display the results obtained using three alternative decomposition methods. The first alternative technique is in every respect similar to the one presented in Chapter 2, except that it releases the rather strong assumption of normality in the academic performance distribution (Buis 2010). The second alternative method was conceived by Fairlie (2005) and is an extension to binary outcome models of the classical Blinder (1973) and Oaxaca (1973) decomposition, which applied only to continuous dependent variables. The third alternative method was designed by Karlson, Holm, and Breen (2012) to solve the scaling problems of logistic regression.[8]

Though not perfectly equal, the figures delivered by the four decomposition methods are reassuringly close, and they all tell the same story. In the 1960s and early 1970s, for the 1951 cohort, secondary effects were crucial. Their share even increased as pupils progressed through the educational system. Secondary effects rose, from accounting for about three-quarters of the total inequality in transition 1 at age 11 to accounting for almost 95 percent in transition 2 at age 15. For the transition to university, all the inequality between salariat and working-class pupils is accounted for by secondary effects. In the transition to preparatory classes, the relative importance of secondary effects lies between 92.7 percent and 93.3 percent, depending on the method considered.

In the contemporary school system, for the 1984 cohort, primary effects play a far more important role. Secondary effects account for "only" half the overall inequality between salariat and working-class pupils in the transition from lower to upper secondary school. Because no significant differential exists between salariat and working-class children in the transition to university, no decomposition can sensibly be carried out. In the transition to preparatory classes, the share of secondary effects corresponds to around 50 percent of the salariat class advantage.

The core of this chapter lies here. A key—but never clearly demonstrated before—feature of the post–World War II French school system is the sharp historical rise of the share of primary effects in creating class

T A B L E 5 . 4

Relative importance of secondary effects of class in the 1954 and 1981 cohorts (as a percentage of salariat vs. working-class inequality—four methods of decomposition; standard errors in parentheses)

1951 COHORT

	TRANSITION 1 AGE 11				TRANSITION 2 AGE 15				TRANSITION 3—UNIVERSITY AGE 18				TRANSITION 3— PREPARATORY CLASSES AGE 18			
	E.	B.	F.	K.	E.	B.	F.	K.	E.	B.	F.	K.	E.	B.	F.	K.
	68.4 (1.9)	67.4 (1.3)	77.7	68.6	93.7 (2.3)	93.7 (1.7)	95.0	94.1	100.0 (0.5)	100.0 (0.5)	100.0	100.0	93.3 (3.4)	93.3 (2.9)	93.1	92.7

1984 COHORT

	TRANSITION 2' AGE 15				TRANSITION 3'—UNIVERSITY AGE 18				TRANSITION 3'— PREPARATORY CLASSES AGE 18			
	E.	B.	F.	K.	E.	B.	F.	K.	E.	B.	F.	K.
	49.8 (1.9)	50.3 (1.5)	54.7	52.0	No significant total effect				48.2 (7.6)	46.9 (6.1)	51.1	51.6

S O U R C E : 1962–1972 INED survey and 1995–2006 Ministry of Education Panel Study; own calculations.

N O T E : E. = Erikson et al. (2005) decomposition method described in Chapter 2; B. = Buis (2010) decomposition method; K. = Karlson, Holm, and Breen (2012) decomposition method; F. = Fairlie (2005) decomposition method. Standard errors have respectively been computed with the R DECIDE package for the Erikson et al. method (as described in Chapter 2) and with the Stata ldecomp add-on program for the Buis method (using bootstrap). Software related to the other two methods does not provide standard errors for relative importance statistics.

inequality in educational attainment. To emphasize this result, we have represented it in graphical form. The following graphs describe total class inequality and its decomposition in primary and secondary effects as expressed on a log odds scale. The reference category is always the working class. Within each graph, the same transition is compared for the 1951 and 1984 cohorts.

If as we mentioned above, the 1960s school system was more socially unequal than the contemporary one, it is chiefly because of the existence of a first branching point operating as early as age 11. This transition no longer exists (Figure 5.5, left); the reader should bear this in mind when looking at later transitions (Figure 5.5, right, and Figure 5.6). In the 1951 cohort, pupils had already been through a selection process, which is not the case for children belonging to the 1984 cohort.

Figures 5.5 and 5.6 highlight and summarize our key results. The main difference between the two cohorts now becomes self-evident: primary effects were almost nonexistent; they are now highly consequential. While secondary effects were the almost sole mechanism creating class inequality for the 1951 cohort, they are much less decisive now.

Controlling for Differences in the Measurement of Performance

One methodological remark could undermine our conclusion: what if the trend identified here was due to differences in measurement between the two surveys? All variables have been constructed to be exactly comparable, with the exception of the performance variables (see above). In the 1962–1972 INED survey, the academic level of pupils is assessed by the teacher on a five-point scale before each transition, while in the 1995–2006 panel study, continuous test scores are available. In analyses not shown here, we assessed the claim that the upward trend in primary effects could stem from a better measurement of performance in the latter dataset. To do this, we deliberately impaired the two continuous performance variables for the 1984 cohort by splitting them into five categories. Three different categorizations for both variables were implemented: first, a normalization in five categories;[9] second, a reproduction of the distribution of the categorical performance variable observed at the same transition in the first survey; and third, a transformation into quintiles. We ran all the calculations again, following the method described in Chapter 2, for the transitions undergone by the 1984 cohort at age 15 and age 18, using these new
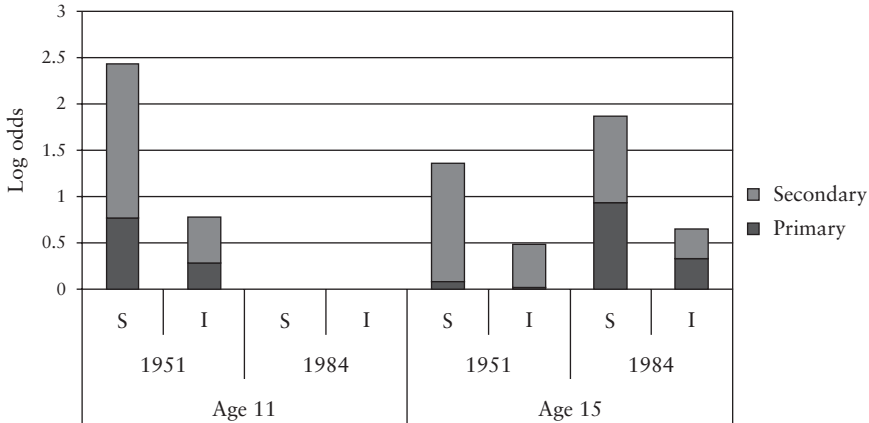
Figure 5.5. Total class inequality and its decomposition into primary and secondary effects, transitions at age 11 (1951 cohort) and age 15 (1951 and 1984 cohorts)

NOTE: All bars represent log odds ratios (for total inequality, primary and secondary effects) expressed relative to working-class pupils. S = salariat; I = intermediate.
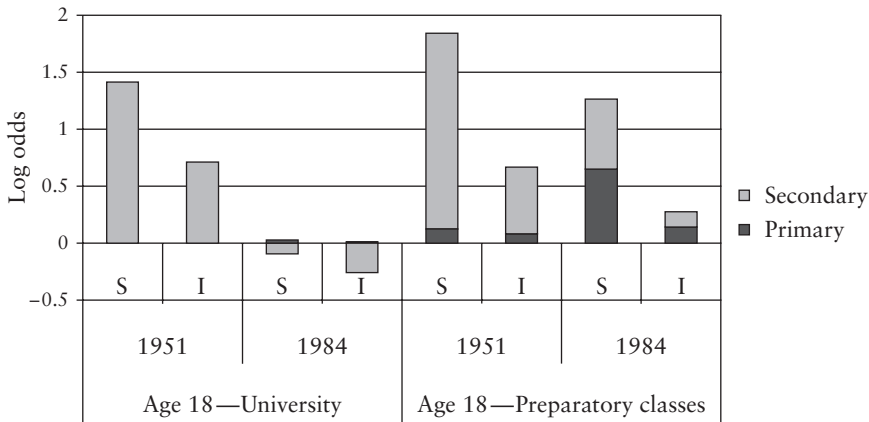

Figure 5.6. Total class inequality and its decomposition into primary and secondary effects, transitions at age 18 (1951 and 1984 cohorts)

NOTE: All bars represent log odds ratios (for total inequality, primary and secondary effects) expressed relative to working class pupils. At the transition to university, we compare pupils who entered university to pupils who were channeled into all other tracks excluding those who were accepted in preparatory classes. Symmetrically, in the transition to preparatory classes, we compare pupils who entered preparatory classes to pupils who went into other tracks excluding those who entered university. S = salariat; I = intermediate class.

five-category performance variables. In no instance did the results generated by these new analyses lead us to question our first conclusion. For example, at the transition at age 15, the share of secondary effects is 57.8 percent and 58.4 percent for the first two categorizations, respectively. Even when the original variable is split into quintiles and thus undergoes the most severe damage, secondary effects still account for 66.1 percent of total effects in the 1984 cohort, which is still a substantial decline on the 93.7 percent estimated for the 1951 cohort.[10] A second possible source of measurement error in the first survey lies in pupils being assessed not by standardized tests but by their own teachers. It could well be that, at a given level of true performance, teachers are socially biased in favor of upper-class pupils at the expense of working-class pupils (Bourdieu and Saint-Martin 1975; Merle 2007). However, if this were the case,[11] the average performance gap between these two social classes would be artificially enlarged, which, all things being equal, would result in an overestimation of the share of primary effects for the 1951 cohort and an underestimation of the historical rise of primary effects.

On the basis of these checks, we can therefore conclude that there has been a clear and decisive historical increase in the relative importance of primary effects. Before drawing further conclusions on this main story, some subplots are now depicted.

PARENTAL CLASS OR PARENTAL EDUCATION?

Educational researchers widely agree that parental education often has a greater influence than parental class on many aspects of a child's school career. This could be particularly true in the case of primary effects, which are closely related to socialization processes influenced by the possession of cultural capital (e.g., De Graaf, De Graaf, and Kraaykamp 2000; see Lareau and Weininger 2003 for a critical review). Information on parental education was unfortunately not recorded in the 1962 INED survey. We are therefore able to measure the share of primary and secondary effects of parental education for only the 1984 cohort. As expected, the relative importance of primary effects is somewhat larger when we look at parental education instead of class in transition 2′ at age 15. Compared to the figures in Table 5.4, secondary effects are indeed slightly lower: 44.6, 44.8,

46.4, and 46.6 percent, respectively, obtained with the Erikson et al. (2005) (see Chapter 2); Buis (2010); Fairlie (2005); and Karlson, Holm, and Breen (2012) methods of decomposition. For parental education, just as for class, no significant total inequality is observed in the transition to university (vs. short vocational tracks or leaving school). Contrary to what we observe at age 15, the share of secondary effects is generally higher at age 18 for parental education than for class in the transition to *classes préparatoires* (vs. short vocational tracks or leaving school): respectively 54.4, 52.9, 49.9, and 53.1 percent with the four methods of decomposition. All in all, and despite slight alterations in one direction or the other, the overall picture thus remains essentially unaltered.

EXPLAINING SECONDARY EFFECTS

The importance of primary effects has been rising over time. However, secondary effects have by no means disappeared and indeed tend to increase throughout the educational career. We here use further attitudinal and institutional variables to investigate factors responsible for secondary effects.

Because secondary effects are those effects of class origin that appear at a given level of academic performance, we anticipate that they will be explained especially by variables linked to parents' and children's educational and occupational aspirations and to the choices of field of study related to these aspirations. The 1995–2006 panel study contains detailed information on many aspects of pupils' educational trajectories, which can help us understand the origin of secondary effects.[12] Using the Fairlie (2005) decomposition method, we can assess the contribution of specific variables in explaining the difference between two groups of individuals as regards a binary outcome, for example, the difference between salariat and working-class pupils in the probability of making a given school transition. Now, to explain secondary effects specifically, we examine this difference in the probability of transition after controlling for academic performance, on top of other explanatory variables of interest, as in a regression model.[13]

For the transition at age 15, after taking academic performance into account, we tried to explain secondary effects by including the family's official first choice of track at the end of lower secondary school (academic track or otherwise), a parental subjective assessment of the child's academic

level (from "very bad" to "excellent" in four categories), and the type of degree that was considered the most useful for finding a job (academic, vocational, or other degrees). The result is perfectly clear: family choice explains almost all (93.5 percent) of the difference between salariat and working-class pupils that is not linked to performance. How parents assess the level of their child explains another 3.1 percent of secondary effects. The third variable has no significant influence.

For the transition at age 18, after controlling for academic performance, we included the type of academic *baccalauréat* passed (major in literature, sociology and economics, or sciences) and the planned characteristics of the pupil's future occupation (yes or no answers to the following items: financially profitable, allowing free time, captivating, secure, enabling meeting people, and entailing travel or staying close to home).[14] Again, the transition to university was not considered, since no significant differential exists between salariat and working-class pupils here. We therefore implemented this model to explain secondary effects in the access to preparatory classes. Beyond academic performance, the type of *baccalauréat* passed is the only variable that helps explain the class gap in the access to *classes préparatoires*. It accounts for 22.2 percent of secondary effects: majoring in the sciences section of the academic *baccalauréat* increases the likelihood of accessing preparatory classes. We see this result as reflecting the fact that, even after controlling for performance, the institutional opportunities for entering different types of *classes préparatoires* are the largest for pupils holding a sciences-oriented academic *baccalauréat*, which is considered in France to be the most prestigious one (Ichou and Vallet 2011, graph 3).

In a nutshell, the family's official choice almost totally explains secondary effects at the end of lower secondary school. In fact, according to the rules and regulations of the French educational system, families first officially express a wish for their child's future track and then teachers and heads of schools make a proposal for a track, *while knowing the family's wishes* (Duru-Bellat 1988). Studying the mechanisms that shape the family's choice in the first place would thus be of key importance but is beyond the scope of this chapter. For the transition at age 18, in the absence of information on students' choice of higher-education track, we showed that the type of *baccalauréat général* passed has a substantial influence on secondary effects in the transition to preparatory classes.

Parental class and education are the most important but not the only sources of inequalities in educational attainment. We also analyzed gender and ethnic inequalities at each transition and their decomposition into primary and secondary effects. Our most noteworthy results are now briefly described.

At each of the five transitions studied, secondary effects are virtually the only mechanism creating gender differentials. At age 15, girls in both cohorts more frequently enter the academic track of upper secondary school than boys do: the odds ratios are 1.74 and 1.52 for the 1951 and 1984 cohorts, respectively. However, at age 18, taking university and *classes préparatoires* together, we identify an interesting historical reversal in the pattern of gender inequality: the odds ratio comparing girls to boys amounts to 0.43 in the earlier cohort but 1.20 in the later one. Decomposing these inequalities highlights that no significant gender difference in academic performance can be reported at the end of upper secondary school in either cohort. However, boys belonging to the 1951 cohort were favored by secondary effects and, therefore, had higher transition rates than girls into the academic track of higher education. The opposite occurs in the 1984 cohort. In their review of international studies on gender inequality in education, Buchmann, DiPrete, and McDaniel (2008, 325) also find that the "proportion of both men and women enrolling in college has increased since the 1970s, but the increase for women has been much more substantial." In France this trend is due to the temporal reversal of secondary effects, which can likely be related to a declining significance of traditional gender-role attitudes (DiPrete and Buchmann 2006) and particularly to a rise in women's expectations for future employment (Goldin, Katz, and Kuziemk 2006). Accessing higher education and obtaining a university degree is objectively an efficient means for women to reduce their relative disadvantage in the labor market in France (Cacouault and Fournier 1998). That said, boys remain highly overrepresented in the most prestigious tracks of higher education. Indeed, women who passed the academic *baccalauréat* are still only half as likely as men to attend *classes préparatoires*. In this case, secondary effects continue to favor men. In the study of gender differentials,

horizontal inequalities between tracks or subjects within higher education are of key importance (Gerber and Cheung 2008).

As regards ethnic inequality, two approaches are followed: first, focusing on parents' country of birth, which is only possible for the 1984 cohort and, second, considering pupils' citizenship and comparing both cohorts. In the 1984 cohort, primary and secondary effects work in opposite directions to create the observed differentials between second-generation immigrant pupils and the majority group. Notwithstanding that ethnic minority pupils perform noticeably worse than the majority group, they have *higher* transition rates than the children of nonmigrants at a given level of academic achievement. This could be related to ethnic minority families seeming to particularly value education, especially as a means of upward social mobility (Zéroulou 1988; Vallet and Caille 1996; Brinbaum and Cebolla Boado 2007). When comparing the cohorts—using the measure of pupils' citizenship, which is the only measure available for both cohorts—two results are worth noting. In the 1960s and in contemporary France, foreign pupils have lower transition rates than their French schoolmates at age 15 (the odds ratios are 0.65 and 0.59 for the 1951 and 1984 cohorts, respectively), but rates do not significantly differ at age 18. Our results also demonstrate an interesting historical reversal in the role played by secondary effects at age 15. In the 1960s foreign pupils were penalized by primary and, particularly, by secondary effects, whereas now secondary effects favor them. To interpret this change, we put forward three nonexclusive tentative explanations. First, in the period of strong economic growth of the 1960s, foreign migrants were in France to work mainly as manual workers and education was not considered to be a requirement for achieving social mobility. In contemporary France, on the other hand, school success proves to be at the center of upward mobility strategies. In addition, in early waves of labor migration, immigrants were likely to be less positively selected in terms of educational attainment and social status than more recent migrants. This latter-day positive selection of immigrants might be related to higher aspirations (Heath, Rothon, and Kilpi 2008, 223–24). Lastly, the reform that allowed families to have a say in the tracking procedure at the end of lower secondary school was not introduced until the 1970s and could explain the reversal of secondary effects, as foreign families in contemporary France translate their educational aspirations into more ambitious school plans that are taken into account by the teachers' teams (Vallet and Caille 1996).

CONCLUSION

Among the findings presented in this chapter, three main elements are essential. First, upper-class families' demand for the two components of the academic track of higher education, university and *classes préparatoires*, has dramatically changed over time. In the 1960s and 1970s, when few pupils had the opportunity to access higher education, both university and preparatory classes were valued by the upper class. After the two waves of educational expansion in the 1960s to early 1970s and the late 1980s to early 1990s, mass universities, where many working-class pupils study, no longer grant a clear relative advantage to upper-class pupils. Preparatory classes, which are selective and lead to elite schools (*grandes écoles*), have therefore become much more attractive to upper-class families. This type of "horizontal" inequality, which occurs within a given level of schooling, has become increasingly significant (Lucas 2001; Ichou and Vallet 2011). It might thus be argued that in the present-day French school system the selective-versus-non-selective contrast is actually the most relevant for comparison with the older system (Berthelot 1987).

Second, in the course of pupils' educational careers, secondary effects generally increase relative to primary effects. Boudon himself predicted this result. As a matter of fact, only higher achievers from lower-class backgrounds survive the first branching points. Therefore, "after a number of years, differences in school achievement as a function of social background are scarcely observable in a given cohort" (Boudon 1974, 85): primary effects should tend to die out across the school career (similar observations are found in Bourdieu 1966, 334–35). Though true, this upward trend in the relative importance of secondary effects throughout an educational career is not as strong as Boudon supposed. Therefore, the primary-versus-secondary-effects distinction should not be reduced to a temporal opposition between a compulsory school period when all primary effects are created and a postcompulsory-education period during which secondary effects generate all educational inequalities. In the present-day French educational system, primary effects are far from negligible even after compulsory schooling.

Third, we have identified a clear historical rise in the share of the primary effects of social stratification in creating educational differentials. As regards school transitions, academic performance plays a far more

important role in contemporary France than it did 40 years ago. Until the 1960s and 1970s, in the context of a tracked school system, lower-class pupils were eliminated very early on the basis of predominantly inherited social characteristics. Now that the school system is more unified, branching points have been postponed and social differentials are increasingly generated through differences in academic achievement. In other words, school achievement has partially replaced social ascription as the basis of educational selection. With the benefit of hindsight, the French historian of education Antoine Prost maintains that the

> reform of the *collèges* has not only consolidated social stratification, it has legitimated it. This stratification is now based on apparently academic criteria rather than overtly social ones. It thus invites the members of the various social groups to internalize their respective social positions and to accept them as a consequence of their unequal merit. . . . It defines as personal merit or incapacity what would have previously been attributed to the accidents of birth. Responsibility for educational inequality is now laid at the door of individuals rather than society.[15] (1999, 62)

The extent to which individuals from different social classes are aware of or have internalized these structural changes in the creation of educational inequalities would require further qualitative research. What is certain, however, is that this "meritocratization" of the school system is not devoid of ambiguities. This way of legitimizing educational and thus social inequalities as a fair by-product of individuals' own achievements is not harmless to everyone. Indeed, the painful and long-lasting psychological and social consequences of this selection process for the "losers" should not be underestimated (Goldthorpe 1996b; McNamee and Miller 2004; Duru-Bellat 2009).

NOTES

1. Interestingly, the terms "primary effects" and "secondary effects" were absent from the French version of the text (Boudon 1973), and Boudon first coined the distinction in English. It is only recently, and well after the publication of *Education, Opportunity, and Social Inequality* in 1974, that the terms were translated into French as *effets primaires* and *effets secondaires*.

2. Our translation: "the primary cause of nondemocratization: the influence of family background on the child's development and, in turn, on his or her school success," and "the secondary cause of nondemocratization: even at a given

level of school performance, the likelihood of entering lower secondary school is linked to social background."

3. Put simply, Boudon (1973, 1974) saw secondary effects to be the result of socially differentiated rational choices, while Bourdieu (1966, 1974) insisted on the role of the internalization of objective chances of future success. Each position has been portrayed as being in conflict with the other by commentators and by the authors themselves. The supposed incompatibility of the two positions, however, should not be taken at face value, because the real difference between the authors lies in the level of consciousness and intentionality that is ascribed to the individual. Boudon conceived of social actors as being more conscious and intentional than Bourdieu did (see, e.g., Paradeise 1990).

4. When other measures of prior academic achievement in elementary school and early lower secondary school were added to the logistic models, the share of primary effects rose to 64 percent (Duru-Bellat, Jarousse, and Mingat 1993, 52).

5. In this chapter, the term "cohort" should not be understood in the strict sense of people born in a given year. Here, we use it to designate groups of pupils who left elementary school at the same time (for our two cohorts, the summers of 1962 and 1995), without necessarily having been born in the same year. The two groups will nevertheless be referred to as the 1951 and 1984 cohorts, respectively.

6. For the 1951 cohort we label the transitions as follows: transition 1 from elementary school to lower secondary school, transition 2 from lower to upper secondary school, and transition 3 from upper secondary school to higher education. For the sake of clarity, we add a prime sign to the corresponding transitions for the 1984 cohort, i.e., transition 2′ and transition 3′.

7. This demonstrates that educational expansion has resulted in greater heterogeneity in (often unmeasured) ability variables at each level of schooling, which was precisely Mare's prediction in his 1981 *American Sociological Review* paper (82, especially note 5).

8. The coefficients that we want to compare are the log odds ratios associated with class, conditional and unconditional on academic performance. To do so, we need to neutralize the scaling problems described by Karlson, Holm, and Breen (2012) and Mood (2010). Following the former paper, we compare (1) a logit model including class and academic performance residualized with respect to class (i.e., uncorrelated with class) with (2) a model including both class and the usual academic performance variable. The former model gives the total effect of class, while the latter indicates the secondary effects of class.

9. Given that the performance variable is standardized (mean = 0; standard deviation = 1), we used the following cut points to construct the five categories: –1.5, –0.5, 0.5, and 1.5.

10. As a further robustness check, we used two variables from the 1995 panel study that are not used in the analysis because they do not correspond to any transition: standardized test scores and subjective teacher assessments of pupils, both measured at the beginning of lower secondary school. The former

variable is continuous; the latter is categorical. These two variables thus reproduce the two different ways of assessing pupils' achievement in the 1962 and 1995 surveys. It turns out that the correlation between these two variables is 0.79, which is high and thus means that both variables are quite similar measures of pupils' academic achievement.

11. Using the same two variables described in the previous note, we can confirm that this social bias in teachers' assessment exists, but that it is not strong. We regressed teachers' assessment on social class of origin, *controlling for test scores*, and observed that, for a given test score, teachers tend to give slightly inferior assessments to working-class children and, to a lesser extent, intermediate-class children, compared to pupils belonging to the salariat.

12. No such data are available for the 1951 cohort.

13. For the sake of brevity, detailed tables are not displayed but are available in the web appendix (http://www.primaryandsecondaryeffects.com).

14. The relevant question was asked in a subquestionnaire included in the panel study in 2002: "What qualities would you like your future occupation to have?" followed by the items.

15. Written in French as "La réforme des collèges n'a pas seulement consolidé la stratification sociale : elle l'a légitimée, puisqu'elle l'a fait reposer sur des critères apparemment scolaires et non plus ouvertement sociaux. Elle a invité les membres des différents groupes sociaux à intérioriser leurs positions sociales respectives et à les assumer comme une conséquence de leur inégal mérite. . . . Elle a transformé en mérite ou en incapacité personnelle ce qu'on aurait auparavant imputé aux hasards de la naissance. La charge des inégalités devant l'école n'incombe plus à la société mais aux individus" (Prost 1997, 111).

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