Historical Methods: A Journal of Quantitative and Interdisciplinary History

ISSN: 0161-5440 (Print) 1940-1906 (Online) Journal homepage: https://www.tandfonline.com/loi/vhim20

Changing Social Mobility in Nineteenth-Century France

Noël Bonneuil & Paul-André Rosental

Changing Social Mobility in Nineteenth-Century France

NOËL BONNEUIL
Institut National des Études Démographiques (INED) and CAMS — École des Hautes Études en Sciences Sociales, Paris

PAUL-ANDRÉ ROSENTAL
Laboratoire de Démographie Historique (EHESS) and Institut National des Études Démographiques (INED), Paris

Social mobility has traditionally been regarded as revealing the degree of "openness" of societies. Whereas much work has addressed the influence of various sociopolitical systems on individual attainment, we shall pay attention here to the emergence of geographical and temporal patterns of social mobility.

J. Dupâquier and D. Kessler (1992) conducted the 3,000 Families Survey to obtain a representative sample from French society for each generation.[1] These families were followed throughout the nineteenth century by means of marriage certificates. Each certificate contains the names, occupations, dates of birth, and places of residence (the French *départements*) of the bride and groom, as well as those of their living parents. Genealogies from all over France thus appear over three to four generations, representing about 45,000 marriage certificates from 1803 to 1902 (see Appendix A for the composition of the data set).

We can use this sample to address the social mobility of men and women, an important question in both sociology and history. Neglected by nineteenth-century scholars, female social mobility has been studied only recently (Moch and Tilly 1985; Gullickson 1986; Motte and Pélissier 1992; Erikson and Goldthorpe 1993). Moreover, social mobility has often been understood as a binary issue dealing with a bourgeois society's ability to favor social ascent or, on the contrary, to intensify social inequalities.

The purpose of this article is both historical and methodological: We wanted to shed light on social mobility in nineteenth-century France; to do this, we developed a *continuous* scale of social status based on literacy rates. Given the occupation of the father (or the mother), the possibilities left to the son (or the daughter) are contained in a whole continuous set, which we characterize. Based on the notion of *set-valued function*, also called *correspondence* in mathematics (Aubin and Frankowska 1990), our treatment slightly extends the method commonly used since R. M. Hauser et al. (1975), who considered matrices of occupational classes. This procedure allowed us to avoid predefined occupational categories and to adapt our regrouping of the numerous occupations to the structure and abundance of the data. The intensity and the structure of change in social mobility were then studied with its possible nonlinear effects.

While remaining close to previous authors, such as Hauser et al. (1975) or M. Hout (1984), our treatment suggests extending the usual modeling of the transition from one category to another, from an occupational origin to an occupational destination. This extension is necessitated by the fuzzy notion of occupation in nineteenth-century France, because the way in which occupations were designed varied in time and space, and the occupational structure itself changed over time as well. We wanted to clarify how social mobility was transformed, a task that would be confused by a priori occupational categories.

Social Mobility in Space

P. A. Sorokin (1927, 1964) portrayed social mobility through the metaphor of a social space, enabling him to raise the political question of the openness of a society in a new manner (de la Gorce 1991, 1993; Goldthorpe 1987, chap. 1). The frame Sorokin established has prevailed so far and was used notably by S. M. Lipset and R. Bendix (1960), who compared studies on a national scale to finally deny any substantial difference in social openness between Europe and the United States.

Meanwhile, the question of space in social mobility has received less attention. As Mike Savage (1988, 554–55) put it: "Despite the considerable sophistication of social mobility studies they nearly all remain uninterested in spatial issues." Referring among others to the Nuffield Mobility Study reported by J. H. Goldthorpe (1987), Savage (1988) stated that most social mobility studies "simply assume that a national survey should be the appropriate spatial unit of analysis." To explain this underestimation of the importance of the geographical diversity of social mobility, he suggested that "the mobility of people is at best seen as theoretically uninteresting, and at worst politically diversionary."

From Occupation to Social Status

Measuring social positions has usually led to the notion that societies are hierarchically ordered along scales such as economic resources, political power, skill, or prestige (Blau and Duncan 1967; Hout 1984; Goldthorpe 1987). Every individual can be located within the social hierarchy, conceived as a physical space, so that fathers can be compared with sons, or mothers with daughters, at two time periods. In these works, the occupations are too diverse, so that ready-made classifications are used to reduce the variety of occupations into a limited manageable number of ordered categories.

In spite of its apparent flaws, this pragmatic solution has been maintained by a sociological tradition rather than by necessity (Daumard 1963, 1973; Sewell 1985; Desrosières and Thévenot 1988). Indeed, occupational hierarchies do not necessarily fit other possible measures of social hierarchy, such as literacy. W. H. Sewell (1985, chap. 4) compared the occupations of the spouses to those of the witnesses on the wedding day to build a social stratification: the hierarchy he found turned out to be inconsistent with a priori occupational categories.

Moreover, a priori classifications determine the observed phenomena: Coding a given data set according to two different occupational classifications and using declarations of occupations of father and son at the son's marriage in the 3,000 Families Survey, M. Gribaudi and A. Blum (1990) obtained completely opposite representations of the society under study. They showed that, basically, the interpretations yielded by classifications actually reflected the guidelines of classificatory systems.

This instability of occupational classifications led us to build a social continuous scale without any a priori category. Such continuous perspective may be a plus to the a priori categories commonly used to classify occupations. To do this, we used literacy rates. Each marriage certificate informs us whether or not the spouses and their parents could write down their names after the ceremony. The probability of signing the marriage certificate can thus be calculated for each occupation, independently of geographical location, time, or age (at marriage). A new scale, the probability of signing if time, age, and geography were the same, can thus be assigned to each occupation in the sample. This allowed a comparison between parents and children, even though they did not marry at the same age, during the same period, or maybe not even in the same *département*, even if occupations did not have similar meanings from one period to another or from one region to the other. As a referee of this article pointed out, our procedure, which allows an adjustment in the rise of the literacy rate, is necessary to avoid biases such as making downward mobility appear to be upward mobility.

Using literacy rates to characterize social position is not self-evident. Social hierarchy depends on the society considered. J. L. Spaeth (1979) argued that there were at least three vertical dimensions of occupational differentiation that are not independent from each other—prestige, authority, and complexity (see Hout 1984). Education and knowledge also constitute such dimensions (see Bourdieu 1979), but using them to define social positioning raises two difficulties. First, how can education be measured in archival materials? Quantitative historians usually track education through literacy, which is revealed by the existence of a signature on the marriage certificate, a document that is usually well preserved. The indicator of signature was used by many authors to measure and interpret social phenomena, from socioeconomic development (Lesthaeghe 1992; Le Bras 1986) to patterns of migration (Heffernan 1989).

Second, can this piece of information be used to characterize social position? There is no single answer to this question. In seventeenth-century rural Piedmont, only one person per family was in charge of reading and writing, mainly for commercial purposes, so that measuring literacy at a personal level is misleading (Levi 1988). In nineteenth-century France, literacy improved regularly, men's preceding women's. Literacy thus turns out to be a good indicator of a hierarchy of education during a transitional phase. Before the time of Jules Ferry, who founded free, compulsory state education in the 1880s, villages could not always afford a schoolteacher, nor could families always afford to send their children to school rather than to work (Luc 1986; Perdiguier 1977). In this context, the ability to read and write reflected the family background and influenced the occupational choices of the children. In many aspects, the French disagreed about the importance of literacy (Weber 1976; Nadaud 1976).

According to Sewell (1985, 75), in nineteenth-century Marseille, literacy was an indicator of social position: "Those who could read and write had access to a world that transcended face-to-face oral communities. . . . Literacy, by definition, was in French; it alone was taught in the schools. . . . To be literate, therefore, meant to have command of the national language: to be illiterate often meant to have only a limited knowledge of French. . . . Those who did not know French were significantly limited in their ability to understand and cope with their rapidly changing urban society." Beyond the specific case of Marseille, where "the spoken language of the city's popular classes was a dialect of Provençal," Sewell's argument can be extended to most of France. Except for a large area around Paris, the rest of the country spoke regional vernacular dialects, or even languages linked to unwritten cultures, and had difficulties understanding French (Weber 1976). During the nineteenth century, these regional particularisms were wiped out. Sewell (1985, 85–86) pointed out that literacy in this transition process is an excellent indicator of social hierarchy because it is connected with prestige and status scales, specifically, the choice of witnesses and the bride's position as noted on the marriage certificate. Literacy was not entirely correlated with the status scale, but it reflected an unequivocal hierarchy; it "distinguished rank better at the bottom of its range than at the top," whereas the prestige and status scales "distinguished rank effectively at the top but not at the bottom," allowing the author "to combine the scales into a single scale of occupational status." It would be better to multiply these comparisons, particularly with wealth or income. However, it is already difficult to find the average income corresponding to each occupation at a national level, let alone at a local or even individual scale. There is a TRA data set—made up of those whose family names begin with the letters *TRA*, as in *Tra*vers, for example—indicating whether or not people left property, but this set (from Tables of Successions and Absences) cannot be matched with the TRA data set coming from marriage certificates.

Thus, literacy is our sole available estimator of an occupational scale, and it should be a good estimator in the specific context of nineteenth-century France. The emergence of literacy in France deserves attention and could be examined conveniently with our data set. However, the question of social mobility is of primary importance and has been the focus of much discussion (Gribaudi and Blum 1990; Dupâquier and Kessler 1992). The 3,000 Families Survey offers a unique opportunity to enter into the debate. We will not address the question of the emergence of literacy here. Moreover, to know whether occupation produced literacy or vice versa does not interfere with the fact that literacy and occupational attainment were correlated. Thus, occupations can be ordered along a simple linear scale based on literacy.

This technical opportunity is the consequence of the logit model, which "provides an interpretable linear model for a categorical response," by "calculating the relative probability of falling into one of [several] categories on some variable of interest" (Demaris 1992, 1). Specifically, we relate the probability denoted prob(sign) that a groom or a bride signed his or her marriage certificate without consideration for age, time, or region of residence, through the equation

$$\log\left(\frac{\text{prob(sign)}}{1-\text{prob(sign)}}\right)=\alpha+\delta_o+\varepsilon, \qquad (1)$$

where ε is a perturbation, and α and δ_o are constants, constrained by $\Sigma_o\,\delta_o = 0$. All things being equal, the effect of an occupation O on the odds of signing is simply δ_o. A measure of occupational status independently on time, age, and location reads as follows:

$$p_o=\frac{e^{\alpha+\delta_o}}{1+e^{\alpha+\delta_o}} \qquad (2)$$

Subsequently, a quantitative value between 0 and 1 can be assigned to any occupation, whatever time or location. This operation is conducted for brides and grooms, respectively. The quantitative scale of occupational status built in this manner is also applied to measure the occupations of the parents when their own marriage certificate is available. In fact, parents are assigned the occupational status they had at the time of their own wedding, not at the wedding of their child. Marriage certificates are thus connected to each other by filiation, according to preliminary work done by Rosental (1999). Specifically, say, a farmer who did not sign his certificate is scored the same as a farmer who did. In addition, a farmer living at the beginning of the century, who was likely to be illiterate, is scored the same as a farmer at the end of the century, when there were few illiterate people. To be able to compare occupations at different times or locations is a strength of our procedure and a prerequisite to studying social mobility at a time when denominations could have various meanings according to the context. As we said before, this procedure can be useful only during periods of literacy transition, which creates a heterogeneity of occupations in regard to the signing status. We exploited this heterogeneity as a marker of occupational status. Earlier in the transition, too many occupations corresponded to too many *nonsigning* people who couldn't write their names, whereas later too many occupations corresponded with too many *signing* people who could write their names. The period considered here, 1810–1910, is appropriate for making the connection between occupations and the ability to sign one's name. Far from perfect, this procedure is, however, a unique tool when we consider the scarcity of the information available on nineteenth-century families. Examining that period can provide us with some insight on geographical, familial, and temporal patterns of social mobility.

Certain occupations, such as schoolteacher or typographer, clearly corresponded to signing people (confirmed by the data set), so that a probability of 1 is systematically assigned to the occupations that have no observed occurrence in the nonsigning status. Other zero frequencies found in the hierarchy of occupations along the signing-status scale can be caused by too small a sample (see Appendix B). These rare occupations must be excluded from the analysis. Trial and error led us to accept the occupations that were represented at least fifteen times and, consequently, to ignore those under that threshold. This procedure eliminated 1,352 observations out of 21,897 for men and 670 out of 25,579 for women; it is common practice in statistical studies to comply with the law of large numbers. Even if some occupations, such as machinist or photographer, had a large number of occurrences, they might have appeared only late in the century. Others may have become obsolete. Provided these occupations were represented in both signing statuses, the additive structure of the logit model makes it possible to assign a value to them.

This is not to say that withdrawn occupations were exceptional, but that they were denoted on marriage certificates in an unusual way. No a priori categories were used, and original occupations were taken as they appear on the certificates. However, a few occupations with generously detailed descriptions were simplified from the original: For example, *vendeur de tripes à la mode de Caen* (Norman braised-tripes merchant) became *vendeur de tripes* (tripes merchant), or *soldat du 3ème régiment d'infanterie* (soldier from the 3d infantry regiment) was subsumed under the term *soldat* (soldier). For the rest, primary mentions such as *caporal* (corporal), for instance, remained the same. Similarly, we have carefully distinguished between *drapier* (clothier), *marchand* (merchant), or *tisserand* (weaver), but we regrouped the few officers of the sample together under the name *officier* (officer).

Such a procedure makes it possible to assign the same value to father and son when both of them had the same occupation (at their respective marriages). Rates of signing increased as the century progressed, and laborers (not to be confused with *laboureurs* [plowmen]), for example, were more likely to have signed their marriage certificates in 1900 than, say, in 1860 or as early as 1820. The use of the logit model allowed us to overcome this difficulty by assuming that the occupation of laborer corresponds to a basic level of the logit (modeled by $\alpha + \delta_o$).

We used the logit model to create a variable that we now study; it fuels our modeling of social mobility, whereas logit modeling is usually used at the end of data collecting. Specifically, to capture a significant change in mobility, we had to work on a measure of social score independent of time and space, to compare fathers with sons, and mothers with daughters. Because we knew that the meaning and designations of occupations changed during the nineteenth century as a part of "social development," our challenge was to detect development in the transitions from father to son, or mother to daughter, so long as scores were rendered comparable from one generation to the next.

We successively applied eq. (1) to men and women, respectively, producing gender-specific occupational hierarchies. For 19,699 men, there were 125 occupations (see Appendix B). We conducted the same procedure for female occupations, for example, distinguishing between activities such as *couturière* (dressmaker) and *raccomodeuse* (mender) (which, incidentally, is mentioned fewer than fifteen times and subsequently does not appear in Appendix B). A woman who declared herself to be *sans profession* (without occupation)—and whose husband declared himself a *fermier* or *cultivateur* (farmer)—was considered a *cultivatrice* (farmer). Normally, a female marriage certificate would have been registered under the woman's maiden name. However, some women might have been recorded under their husbands' names, thus becoming somewhat "invisible" when the data were collected. For 20,336 women, there were 62 occupations as shown in Appendix B.

Measuring the Change

Building a Mobility Matrix

From the beginning of the Sorokinian tradition, most work on intergenerational occupational mobility has been aimed at the construction of a "mobility matrix, representing the structure of occupational allocations to be explained" (Blau and Duncan 1967, 10), designed to support an "analysis of the conditions that determine the process of mobility." Comparisons over time are generally made by encountering two tables of data from two points in time. Authors on intergenerational occupational mobility have described transition matrices (Goodman 1965; Hope 1972; Hauser et al. 1975; Hout 1984). Hauser et al. (1975), for example, used a three-way log-linear model:

$$\ln F_{iik} = \lambda + \lambda_i^P + \lambda_j^S + \lambda_k^T + \lambda_{ik}^{PT} + \lambda_{jk}^{ST}, \quad (3)$$

where T, P, and S denote time, father, and son, respectively, and where F_{ijk} is the expected frequency in the cell (i,j,k) of a frequency table: Father's occupation × Son's occupation × Periods.

Using linear regressions, and studying U.S. society, P. M. Blau and O. D. Duncan (1967, 140) characterized its degree of openness or lack thereof by pointing out how "short-distance movements exceed long-distance ones." They calculated a ratio of observed frequencies over those obtained under the assumption of no influence of the father's occupation on his son's ("statistical independence of origins and destinations"). In their case study, Blau and Duncan showed that long-distance mobility was underrepresented relative to short-distance mobility: "The values of the mobility ratios tend to be the highest in the diagonal and decrease gradually with movement away from it."

M. Hout (1984) suggested a more straightforward analysis. He used log-linear modeling for expected frequencies F_{ij} in row i and column j of a correspondence of the father's occupation to the son's occupation, as

$$\ln F_{ij} = a_0 + a_{1i} + a_{2j} + b_{ij}. \quad (4)$$

This model received additional variations when Hout added "autonomy scores" or training scores in occupation.

Building a Correspondence

Equipped with our one-dimensional occupational hierarchies, one for each gender, the correspondence of the father's occupation to the son's occupation, or the mother's to the daughter's, appears as a recurrence map from one generation t to the next $t + 1$:

$$\text{(son) } s \in X(f) \qquad \text{(daughter) } d \in Y(m), \quad (5)$$

where $f \in [0,1]$ and $m \in [0,1]$ are the measure of the occupational status of a father and mother, respectively, with respect to the probability of signature, and $s \in [0,1]$ and $d \in [0,1]$ that of his son and her daughter, respectively. A map such as X or Y, associating a set to a single value, is called a correspondence in mathematics (or set-valued function).

We adopted the point of view of models in which mobility is viewed as a probability process, such as in Hauser et al. (1975). Usually, a transition matrix is considered, and a Markov chain is defined. Here, occupation varies continuously on [0,1], and subdivisions of the graphs of X and Y that we used will result only from statistical considerations.

Moreover, from a sociological point of view, scores for men and scores for women obviously refer to two distinct labor markets and education systems, so that juxtaposing men and women in a single model may be spurious. From a statistical point of view, male and female individuals cannot be treated as independent observations because of occupational homogamy. The econometric models we used are based on the assumption that the observations are independent. We will subsequently examine homogamy in social mobility.

Regrouping Départements *and Dates*

To study the variation of social mobility throughout nineteenth-century France, we considered its geographical partition into eighty-nine *départements*. The French *département* was the most important territorial division at that time, at least for national statistics. The relative scarcity of the data prevented our building transition matrices according to a yearly rhythm. We might have tried skillful techniques to delineate the relevant periods under consideration, but the data were more or less equally distributed among three periods: 1810–47, 1848–70, and 1871–1910. This distribution is convenient, corresponding as it does to political and economic historical phases: After the fall of the Napoleonic Empire (1815), France was governed by a monarchy until 1848; the next period, 1848–70, covered the time of the Second Republic (1848–52) and the Second Empire (1852–70); the last quarter of the century began after the French defeat by the Prussians (1871) and corresponded to the first four decades of the Third Republic, lasting until 1910. As for the economy, the two most significant crises occurred at the end of the 1840s and in the mid-1870s (Braudel and Labrousse 1970). Considering time in periods rather than as a continuous variable helps reveal nonlinear temporal change: continous time is inappropriate to historical time. Our choice of three periods had the advantage of avoiding the notion of linearity between economically and politically distinct regimes.

We built a typology of temporal change in occupational mobility by regrouping *départements* showing a similar time series of X, the correspondence of father to son (Y being the correspondence of mother to daughter). We tried maximum-likelihood hierarchical clustering and Ward's minimum-variance method (see Spaeth 1979); they produced generally consistent results.

Men

Data per *département*-period are relatively scarce for preliminary clustering, so we reduced the variables used for the regrouping to nine: the probability, given the father's occupation,[2] for the son to have a higher occupational status s than his father, $\text{prob}(s > f \mid f)$ (denoted π_+ from now on) the probability to have a lower one, $\text{prob}(s < f \mid f) := \pi_-$, and the probability of equality, $\text{prob}(s = f \mid f) := \pi_=$ for each of the three periods ($\pi_+ + \pi_- + \pi_= = 1$).

For each *département*-period, the maximum-likelihood estimators are

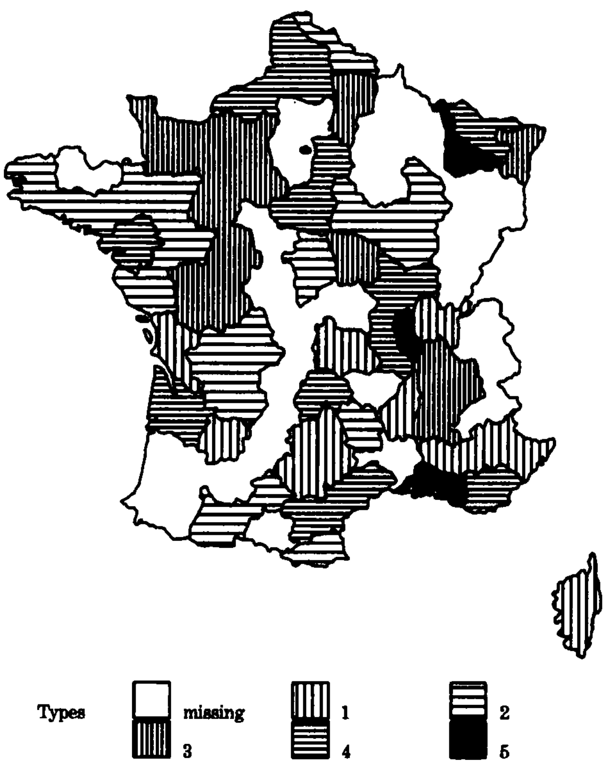
$$\hat{\pi}_+ = \frac{n_{s>f}}{n},\ \hat{\pi}_- = \frac{n_{s<f}}{n},\ \hat{\pi}_= = \frac{n_{s=f}}{n}, \tag{6}$$

where $n_{s>f}$, $n_{s<f}$, and $n_{s=f}$ represent the total number of observations for which $s > f$, $s < f$, and $s = f$, respectively, and n is the total number of observations.

We restricted the analysis to the sixty-one *départements* for which $n \geq 30$ at each of the three chosen periods (that is, at least ninety observed father-to-son transitions per *département*), to dispose of satisfactory estimates of the transition maps. The rest of our analysis ignored the other *départements* (twenty-eight out of eighty-nine). Even if we obtained only a partial image of the French landscape of social mobility, we took the precaution of ensuring its reliability, which would not have been the case if we had included all the *départements*. Moreover, the random nature of the TRA sample normally guarantees that the eliminated *départements* are chosen at random. To find *départements* with enough data is a difficulty in the treatment of social mobility at a scale smaller than the whole nation.

The regrouping was then made in two steps: (1) In each of the retained sixty-one *départements*, probabilities $\hat{\pi}_-(T)$, $\hat{\pi}_+(T)$, and $\hat{\pi}_=(T)$ were estimated for each period T, T equal to [1810–47], [1848–70], and [1871–1910], successively. (2) These nine variables—π_- (1810–47), $\pi_=$ (1810–47), π_+ (1810–47), . . ., π_+ (1871–1910)—for each *département* were used for the clustering. We retained Ward's clustering method to regroup *départements* into a limited number of clusters, defining spatiotemporal types of the transition from father to son (and, in the next section, from mother to daughter). Our guiding principle was to place *départements* into groups suggested by the data, not defined a priori, so that *départements* in a given group—here a geographical type—tend to have a time series π_+ (1810–47), . . . π_+ (1871–1910) similar to each other in some sense, whereas *départements* in different clusters tend to be dissimilar. To be usable, this cluster analysis had to constitute a geographical partition of France in a limited number of units, whereas the size of the sample in each of these units had to be increased to improve sufficient statistical accuracy and permit the econometric modeling of transitions X or Y in detail. Five types of changing social mobility are shown in figure 1. As the regrouped *départements* are more or less contiguous, a spatial pattern emerges.

FIGURE 1
Regrouping of *Départements* into Five Types, according to Occupational Mobility, for Men (Based on 19,196 Father-to-Son Observed Transitions)



- Type (1) corresponds to a part of southern rural France within the most remote areas of France, including Pré-Alps, Corsica, and south of the Massif Central.
- Type (2) regroups rural *départements* from Brittany-Vendée-Maine, from Bourgogne, from Southwest, and from the Pyrénées, the very rural *département* of Lozère.
- Type (3) regroups *départements* located approximately on a more distant circle around urban centers, going from Normandy to Poitou on the western side of Ile-de-France, counting the *départements* of Aisne and Nièvre on its eastern side. Similarly, the Rhodanian corridor constitutes a second hinterland of the cities of Lyon and Marseille, as does the *département* of Bas-Rhin for the industrialized *département* of Meurthe-et-Moselle (created after 1871).
- Type (4) represents *départements* with medium-sized cities on the maritime façade—Gironde (city of Bordeaux), Loire-Inférieure (city of Nantes), the northern façade (Le Havre, Boulogne, Calais)—or near an important industrialized area: in the hinterland of Ile-de-France, or of the big cities of Lyon or Marseille. Type (4) is thus made of medium-urbanized *départements*.
- Type (5) corresponds to urbanized France: the *départements* of Seine (city of Paris), Bouches-du-Rhône (city of Marseille) and Rhône (city of Lyon). In addition to these highly urbanized *départements*, type (1) also regroups Meurthe-et-Moselle, which was most advanced in the French industrial revolution.

The partition of France represented on figure 1 shows both statistical and historical consistency, delineating clusters hierarchically arranged around urban centers and highlighting the importance of urbanization on social mobility patterns. Type (5) representing major cities (Paris, Lyon, Marseille) is separated from the rural areas types (1) and (2) by the intermediary urban types (3) and (4). Two *départements*, Nord and Cantal, seem to invalidate this hierarchy. The *département* of Nord, which experienced a very rapid industrial and demographic growth during the nineteenth century, is included in the mostly rural type (2). Known through a couple of industrial cities, the rest of Nord was made up of many very poor rural areas (Rosental 1999), and the appearance of rural traits in social mobility reminds us of this specificity. We have no explanation for the inclusion of Cantal in the quite urbanized type (4). Outmigration was not easier in this *département*. Our finding consistent results, apart from that of Cantal, justifies the method a posteriori. This clustering provided us with enough data per geographical type to analyze how social mobility changed over time and space.

Transformations of Social Mobility

By condensing the French spatial heterogeneity into these five types, instead of dealing with a mosaic of the sixty-one retained *départements*, transition maps can now be estimated with greater precision. For each type, empirical distributions of s given f show a high peak at $s = f$, the diagonal, and gradual movement away from this diagonal as expected. In nineteenth-century rural France, sons often used to assume the occupation of their fathers (Gavignaud-Fontaine 1996), though not systematically (Rosental 1999). To characterize fully the correspondence from father to son, we asked, "Did the son score higher or lower than or equal to his father?" to distinguish the effect from the magnitude of the distancing. If we had discrete occupational categories, the usual log-linear modeling from origin to destination would be enough. As we already pointed out, the continuous scale we used made an original treatment necessary. Studying each gender separately did not prevent our measuring the influence of the mother's score on the son's, that is, we could estimate an effect of a variation in the mother's score on the son's. Considering the influence of the mother on the son and of the father on the daughter is something new in social mobility studies, which are usually restricted to a comparison between father and son or mother and daughter.

Specifically, we model first π_-, π_+ and $\pi_=$ through a logit model and, second, by other logit models, the probability that the son made a relative improvement $(s - f)/(1 - f)$ knowing that he did attain a higher status s than his father's f, and the probability that the son made a relative decrease $(f - s)/f$, given that he did attain a lower status than his father's. By treating effects of "whether" the son made better, identical, or lower status, and of "how much" jointly instead of mixed, temporal and spatial influences appear more clearly. The various probabilities involved are specified as logits:

$$\ln(\pi_=/\pi_-) = \alpha + \beta f + \mu f^2 + \gamma m + \theta m^2 + \zeta a + \delta_T + \eta_R + \upsilon_d + \lambda_{RT} \qquad (7)$$

$$\ln(\pi_+/\pi_-) = \alpha' + \beta' f + \mu' f^2 + \gamma' m + \theta' m^2 + \zeta' a + \delta'_T + \eta'_R + \upsilon'_d + \lambda'_{RT}\ ,$$

where α and α' are intercepts, the influence of the score of the father is reflected by β and β' for the linear part and μ and μ' for the quadratic part. γ and γ' quantify the linear effect of the score of the mother, θ and θ' its quadratic effects, ζ and ζ' the effects of age a, δ_T and δ'_T the effect of the time period T ($\Sigma_T \delta_T = \Sigma_T \delta'_T = 0$), η_R and η'_R the effects of the residence R of the groom ($\Sigma_R\, \eta_R = \Sigma_R\, \eta'_R = 0$), λ_{RT} and λ'_{RT} are crossed effects of time and location ($\Sigma_R\, \lambda_{RT} = \Sigma_T\, \lambda_{RT} = \Sigma_R\, \lambda'_{RT} = \Sigma_T \lambda'_{RT} = 0$), υ_d and υ'_d, $d = 0,1$ ($\upsilon_0 + \upsilon_1 = \upsilon'_0 + \upsilon'_1 = 0$), the effects of the fact that the parents of the groom did not live in the same *département* as their son did (noted $D_s = D_f$ against $D_s \neq D_f$). This latter variable is used to detect a possible interaction between geographical and social mobilities: Did sons abandon stagnant rural areas for higher-scored occupations, or did migrant sons survive with difficulty so as to accept lower-scored occupations (at the time of their weddings)?

Second, for a son scoring higher than his father, the magnitude with which the son deviated from the father, $(s - f)/(1 - f)$, may not be simple, so it is interesting to model this deviation through a logit specification of whether it is small, medium, or large. We thus express the probability that this relative deviation is small, medium, or large, in terms of geographical location and mobility, father's and mother's scores, and time period. Small is taken as less than the 33 percent quantile ($0 \le (s - f)/(1 - f) < Q_{33\text{percent}}$), medium as between the 33 percent and the 67 percent quantiles ($Q_{33\text{percent}} \le (s - f)/(1 - f) < Q_{67\text{percent}}$), and large as greater than the 67 percent quantile ($Q_{67\text{percent}} < (s - f)/(1 - f)$).

Formally, by denoting

$$\begin{aligned} p_{1+} &= \text{prob}\left(\frac{s-f}{1-f} < Q_{33\text{ percent}} \mid s > f, f\right) \\ p_{2+} &= \text{prob}\left(\frac{s-f}{1-f} \in \left[Q_{33\text{ percent}}, Q_{67\text{ percent}}\right] \mid s > f, f\right) \\ p_{3+} &= \text{prob}\left(\frac{s-f}{1-f} > Q_{67\text{ percent}} \mid s > f, f\right) \end{aligned} \qquad (8)$$

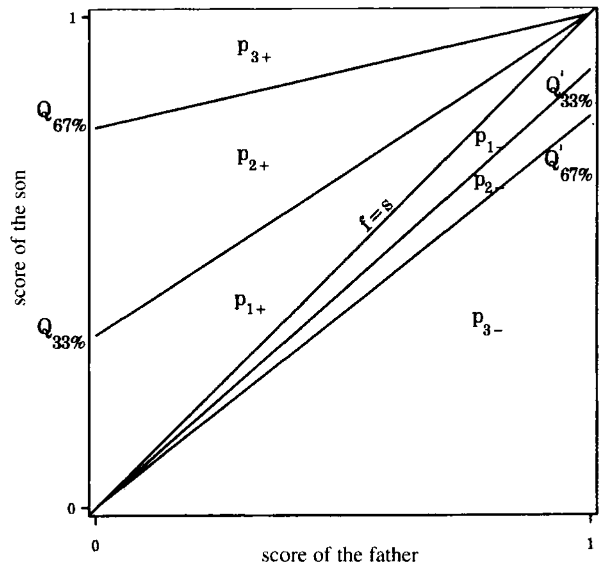
the logit model reads

$$\begin{aligned} \ln(p_{1+}/p_{3+}) &= \alpha_1 + \beta_1 f + \beta_2 f^2 + \gamma_1 m + \gamma_2 m^2 + \zeta_1 a \\ &\quad + \delta_T^1 + \eta_{1R} + \upsilon_d^1 + \lambda_{RT}^1 \end{aligned} \qquad (9)$$

$$\begin{aligned} \ln(p_{2+}/p_{3+}) &= \alpha_2 + \beta_3 f + \beta_4 f^2 + \gamma_3 m + \gamma_4 m^2 + \zeta_2 a \\ &\quad + \delta_T^2 + \eta_{2R} + \upsilon_d^2 + \lambda_{RT}^2\ , \end{aligned}$$

where α_k, β_k, γ_k, ζ_1, δ_T^k, η_{kR}, and υ_d^k, ($\Sigma_T \delta_T^k = \Sigma_R \eta_{kR} = \Sigma_d \upsilon_d^k = \Sigma_R \lambda_{RT}^k = \Sigma_T \lambda_{RT}^k = 0$) denote the intercept and the effects of the father's and mother's scores, age, time period, geographical type of residence, and whether the father and son lived in different *départements* (geographical mobility).

FIGURE 2
Subdivision of Graph of Father-to-Son Transition Correspondence



Symmetrically, denoting

$$\begin{aligned} p_{1-} &= \text{prob}\left(\frac{f-s}{f} < Q'_{33\text{ percent}} \mid s < f, f\right) \\ p_{2-} &= \text{prob}\left(\frac{f-s}{f} \in \left[Q'_{33\text{ percent}}, Q'_{67\text{ percent}}\right] \mid s < f, f\right) \\ p_{3-} &= \text{prob}\left(\frac{f-s}{f} > Q'_{67\text{ percent}} \mid s < f, f\right), \end{aligned} \qquad (10)$$

where the $Q'_{\ldots\text{ percent}}$ are the quantiles of the $(f - s)/f$ distribution, the logit model reads the same as in eq. (10), changing p_{i+} into p_{i-}, $i = 1,2,3$. Figure 2 represents this partitioning of the correspondence X of the father-to-son transition.

To Make Higher, Equal, or Lower: Geography and Dynamics

Tables 1, 2, and 3 show that social mobility was sharply contrasted between the geographical types defined on figure 1. Because type (5), urbanized France, has a positive effect on π_+/π_- and a negative effect on $\pi_=/\pi_-$, we see the way city dwelling favors upward social mobility. Specifically, sons in type (1) had an expected odds[3] 4.5[4] times as high as in type (5), unified urban *départements*, of making the same rather than a better score. With regard to type (5), the same odds ratio is 2.7 in type (2), 1.8 in type (3), and 2.2 in type (4). The reproduction of the father's occupation is thus lower in type (5) than in the other types. In types (1) to (4) versus type (5), this reproduction of the father's occupation prevented sons from scoring higher and lower. The other salient feature concerning geographical types is that sons in

TABLE 1
Effect of Geographic Area (T_1–T_5), Domicile (D_s, D_f), Age, Time Period, Father's and Mother's Status on $\ln(\pi_=/\pi_-)$ and $\ln(\pi_+/\pi_-)$, Estimated Regression Coefficients, for Men (N = 16,450)

Effect	Estimate	(*SE*)
Intercept on $\ln(\pi_=/\pi_-)$	.890	(1.833)
Intercept on $\ln(\pi_+/\pi_-)$	1.323	(1.795)
Geographic type		
T_1 on $\ln(\pi_=/\pi_-)$	.721	
T_1 on $\ln(\pi_+/\pi_-)$	–.009	
T_2 on $\ln(\pi_=/\pi_-)$	.408	
T_2 on $\ln(\pi_+/\pi_-)$	.184	
T_3 on $\ln(\pi_=/\pi_-)$	–.404	
T_3 on $\ln(\pi_+/\pi_-)$	–.229	
T_4 on $\ln(\pi_=/\pi_-)$	–.144	
T_4 on $\ln(\pi_+/\pi_-)$	–.139	
T_5 on $\ln(\pi_=/\pi_-)$	–.580	
T_5 on $\ln(\pi_+/\pi_-)$	.192	
Domicile		
$D_s \neq D_f$ on $\ln(\pi_=/\pi_-)$	–.158*	(.034)
$D_s = D_f$ on $\ln(\pi_=/\pi_-)$	.158	
$D_s \neq D_f$ on $\ln(\pi_+/\pi_-)$	.225*	(.035)
$D_s = D_f$ on $\ln(\pi_+/\pi_-)$	–.225	
Age		
On $\ln(\pi_=/\pi_-)$	.009	(.005)
On $\ln(\pi_+/\pi_-)$	.002	(.005)
Period		
1810–47 on $\ln(\pi_=/\pi_-)$	.073	
1810–47 on $\ln(\pi_+/\pi_-)$	–.227	
1848–70 on $\ln(\pi_=/\pi_-)$	–.107	
1848–70 on $\ln(\pi_+/\pi_-)$	–.046	
1871–1910 on $\ln(\pi_=/\pi_-)$	.034	
1871–1910 on $\ln(\pi_+/\pi_-)$	.273	
Status of father (f) or mother (m)		
f on $\ln(\pi_=/\pi_-)$	–1.654	(2.276)
f on $\ln(\pi_+/\pi_-)$	–2.073	(2.274)
f^2 on $\ln(\pi_=/\pi_-)$	.863	(1.573)
f^2 on $\ln(\pi_+/\pi_-)$	1.088	(1.567)
m on $\ln(\pi_=/\pi_-)$	1.082	(3.510)
m on $\ln(\pi_+/\pi_-)$	.166	(3.430)

Note: For covariates of more than 2 items, tests are presented in table 2. Likelihood ratio of the model = 34.1 with 20 *df* ($p_{5\%}$ = .03). The m^2 term, not significant, was omitted. π_+, π_-, and $\pi_=$ are the probabilities that a son's occupational status is higher, lower, or equal to that of his father. T_1–T_5 represent the different geographical types, f represents the father's status, and m represents the mother's status. $D_s \neq D_f$ and $D_s = D_f$ represent whether the residences of the son and father were or were not the same.
*$p \leq .05$.

TABLE 2
Effect of Geographic Area and Time Period on $\ln(\pi_=/\pi_-)$ and $\ln(\pi_+/\pi_-)$, Estimated Regression Coefficients, for Men (N = 16,450)

		Effect	
Geographic type	Period	on $\ln(\pi_=/\pi_-)$	on $\ln(\pi_+/\pi_-)$
T_1	1810–47	.016	–.073
T_1	1848–70	.168	.144
T_1	1870–1910	–.184	–.071
T_2	1810–47	.003	.111
T_2	1848–70	–.060	–.037
T_2	1871–1910	.057	–.074
T_3	1810–47	.034	.029
T_3	1848–70	–.169	–.042
T_3	1871–1910	.134	.013
T_4	1810–47	.087	.162
T_4	1848–70	–.035	–.082
T_4	1871–1910	–.051	–.080
T_5	1810–47	–.140	–.229
T_5	1848–70	.096	.017
T_5	1871–1910	.044	.021

Note: Tests are presented in table 3. π_+, π_-, and $\pi_=$ are the probabilities that a son's occupational status is higher, lower, or equal to that of his father. T_1–T_5 represent the different geographical types.

type (1) had 1.7 more odds of making the same score rather than a higher score compared with type (2), 2.5 compared with type (3), and 2.1 compared with type (4). In type (1), sons had 3.1 more odds of making the same rather than a lower score compared with type (3), and 2.4 compared with type (4).

The reproduction of the father's occupation is thus the highest in the most rural part of southern France represented by type (1), and the lowest in the most urbanized part of France, type (5). In between the extremes, this reproduction is 2.2 times more likely to make a lower score and 1.5 more likely to make a higher score in type (2) versus type (3).

As regards the effects of geographical location, the course of the century favored upward social mobility ($\ln(\pi_+/\pi_-)$ increased with time), whereas the probability of attaining the same score as one's father decreased temporarily during the period 1848–70. The probability of sons making lower scores declined globally. Specifically, sons were 1.4 times more likely to make the same score than a higher one in 1810–47 in contrast with 1848–70, and 1.6 more likely in 1810–47 in contrast with 1871–1910. The general trend reveals not only a decline in the habit of following the same occupation as one's father but also a rising propensity toward obtaining higher-scored occupations.

Interactions represented on tables 2 and 3 show that types (1), (4), and (5) accelerated their openness in the last half of the century, from 1848–70 to 1871–1910 (type (5) × 1848–70 is 1.3 times more likely to make the same rather than a higher score compared with type (5) × 1871–1910). Type (1) also shortened its gap compared with other types in this second half of the century (type (1) × 1871–1910 gives smaller odds of making the same rather than a higher score compared with type (2) × 1871–1910 (odds ratio equal to 0.8); compared with type (3) × 1871–1910 [odds ratio equal to 0.8]). Type (3) also accelerated its openness compared with type (5) (0.9 times more likely to score equal rather than higher in type (3) × 1810–47 in contrast with type (5) × 1810–47 and 0.8 in type (3) × 1848–70 in contrast with type (5) × 1848–70).

The scores of the parents are not significant, discounting the effects of location and time. The probability of making a better, an equal, or a lower score than one's father was thus independent of the father's score. Geographical types are enough to define change in social mobility.

TABLE 3
Chi-Square Tests of Pairwise Equality between Regression Coefficients: Effect on $\ln(\pi_=/\pi_-)$ and $\ln(\pi_+/\pi_-)$, for Men

Pairwise equality	*P* value on $\ln(\pi_=/\pi_-)$	*P* value on $\ln(\pi_+/\pi_-)$
Pairwise interactions		
1810–47 = 1871–1910	0+	0+
1848–70 = 1871–1910	0+	0+
1810–47 = 1848–70	.02	.02
$T_2 = T_1$	0+	.07
$T_3 = T_1$	0+	.04
$T_4 = T_1$	0+	.14
$T_5 = T_1$	0+	.04
$T_2 = T_3$	0+	0+
$T_2 = T_4$	0+	0+
$T_2 = T_5$	0+	.94
$T_3 = T_4$	0+	.23
$T_3 = T_5$	.17	0+
$T_4 = T_5$	0+	0+
Significant Type × Period interactions		
T_1 × 1848–70 = T_1 × 1871–1910	.02	.21
T_1 × 1848–70 = T_3 × 1848–70	0+	.17
T_1 × 1871–1910 = T_2 × 1871–1910	.02	.98
T_4 × 1810–47 = T_4 × 1871–1910	.16	.02
T_2 × 1810–47 = T_5 × 1810–47	.32	.01
T_4 × 1810–47 = T_5 × 1810–47	.09	0+
T_2 × 1871–1910 = T_5 × 1871–1910	.91	.01
T_3 × 1848–70 = T_3 × 1871–1910	0+	.62
T_3 × 1848–70 = T_5 × 1848–70	.04	.62
T_1 × 1871–1910 = T_3 × 1871–1910	0+	.47
T_5 × 1810–47 = T_5 × 1871–1910	.24	0+
T_3 × 1810–47 = T_5 × 1810–47	.20	.05
T_1 × 1871–1910 = T_5 × 1871–1910	.09	.03
T_4 × 1871–1910 = T_5 × 1871–1910	.44	.01

Note: π_+, π_-, and $\pi_=$ are the probabilities that a son's occupational status is higher, lower, or equal to that of his father. T_1–T_5 represent the different geographical types.

Geographical mobility, captured here by whether or not the father and son resided in the same *département* at the time of the son's marriage, played a decisive role in social mobility: the probability of making a better score increased, and, to a lesser extent, the probability of making the same score decreased for sons living in a *département* different from the one in which their fathers lived. Sedentary sons were twice as likely to achieve the same rather than a higher score compared with emigrated sons. This relationship between migration and social mobility contains a circular argument: Did migration favor social ascent, or did the socially mobile migrate? M. J. Heffernan (1989) found a similar relationship between literacy and migration in nineteenth-century Ille-et-Vilaine (Brittany): rural long-distance migrants were more likely than sedentary people to sign their marriage certificate. We suggest a positive selection argument: Those who left the countryside were also the more capable, and they moved to places that were more attractive in terms of social mobility.

Thus, the sole opportunity to escape the system of social mobility imposed by location and period, where sons of low-scored fathers did not have opportunities to keep up with those of higher-scored fathers, was to migrate. Geographical mobility, not the social status of parents, enlarged one's chances of social mobility.

When Sons Scored Higher or Lower, What Were Their Scores Relative to Their Fathers'?

We now address the question of the relative deviation from fathers by sons who accessed higher or lower scores than their fathers. Tables 4 and 5 present the regression

TABLE 4
Estimated Regression Coefficients for $\ln(p_{1+}/p_{3+})$ and $\ln(p_{2+}/p_{3+})$, for Men (N = 4,925)

Effect	Estimate	(*SE*)
Intercept on $\ln(p_{1+}/p_{3+})$	3.284	(2.223)
Intercept on $\ln(p_{2+}/p_{3+})$	.439	(2.090)
Geographic type		
T_1 on $\ln(p_{1+}/p_{3+})$	.078	
T_1 on $\ln(p_{2+}/p_{3+})$	.024	
T_2 on $\ln(p_{1+}/p_{3+})$	.317	
T_2 on $\ln(p_{2+}/p_{3+})$	.156	
T_3 on $\ln(p_{1+}/p_{3+})$	.400	
T_3 on $\ln(p_{2+}/p_{3+})$	.225	
T_4 on $\ln(p_{1+}/p_{3+})$	.071	
T_4 on $\ln(p_{2+}/p_{3+})$	.099	
T_5 on $\ln(p_{1+}/p_{3+})$	−.866	
T_5 on $\ln(p_{2+}/p_{3+})$	−.504	
Period		
1810–47 on $\ln(p_{1+}/p_{3+})$	.554	
1810–47 on $\ln(p_{2+}/p_{3+})$	.497	
1848–70 on $\ln(p_{1+}/p_{3+})$	.023	
1848–70 on $\ln(p_{2+}/p_{3+})$	.019	
1871–1910 on $\ln(p_{1+}/p_{3+})$	−.577	
1871–1910 on $\ln(p_{2+}/p_{3+})$	−.516	
Father's status		
f on $\ln(p_{1+}/p_{3+})$	−8.700	(6.365)
f on $\ln(p_{2+}/p_{3+})$	.451	(5.911)
f^2 on $\ln(p_{1+}/p_{3+})$	5.474	(4.425)
f^2 on $\ln(p_{2+}/p_{3+})$	−.980	(4.093)
Mother's status		
m on $\ln(p_{1+}/p_{3+})$	.113	(.618)
m on $\ln(p_{2+}/p_{3+})$	.156	(.566)
Domicile		
$D_s \neq D_f$ on $\ln(p_{1+}/p_{3+})$	−.288*	(.047)
$D_s = D_f$ on $\ln(p_{1+}/p_{3+})$	.288	
$D_s \neq D_f$ on $\ln(p_{2+}/p_{3+})$	.233*	(.043)
$D_s = D_f$ on $\ln(p_{2+}/p_{3+})$	.223	
Age		
On $\ln(p_{1+}/p_{3+})$	−.013	(.008)
On $\ln(p_{2+}/p_{3+})$	−.019*	(.007)

Note: For covariates of more than 2 items, tests are presented in table 5. Likelihood ratio of the model = 16.4 with 20 df ($p_{5\%}$ = .69). The m^2 term, not significant, was omitted. T_1–T_5 represent the different geographical types, f represents the father's status, and m represents the mother's status. $D_s \neq D_f$ and $D_s = D_f$ represent whether the residences of the son and father were or were not the same. p_{1+}, p_{2+}, and p_{3+} measure the magnitude of the deviation of a son's score from his father's if the son's score was higher than the father's when the difference was small, medium, and large, respectively.
*$p \leq .05$.

TABLE 5
Estimated Regression Coefficients for $\ln(p_{1+}/p_{3+})$ and $\ln(p_{2+}/p_{3+})$ for Men, Interaction Effects (N = 4,925)

Geographic type	Period	Effect on $\ln(p_{1+}/p_{3+})$	Effect on $\ln(p_{2+}/p_{3+})$
T_1	1810–47	.072	.237
T_1	1871–1910	–.004	–.008
T_2	1848–70	.148	.159
T_3	1810–47	.035	–.117
T_3	1871–1910	–.058	–.029
T_4	1848–70	.112	.068
T_5	1810–47	–.015	.126
T_5	1871–1910	–.229	.018
T_1	1848–70	–.068	–.229
T_2	1810–47	–.100	–.254
T_2	1871–1910	–.048	.094
T_3	1848–70	.022	.146
T_4	1810–47	.008	.008
T_4	1871–1910	–.120	–.076
T_5	1848–70	–.214	–.144

Note: Tests are presented in table 6. p_{1+}, p_{2+}, and p_{3+} measure the magnitude of the deviation of a son's score from his father's if the son's score was higher than the father's when the difference was small, medium, and large, respectively.

TABLE 6
Chi-Square Tests of Pairwise Equality between Regression Coefficients: Effect on $\ln(p_{1+}/p_{3+})$ and $\ln(p_{2+}/p_{3+})$, for Men

Pairwise equality	P value on $\ln(p_{1+}/p_{3+})$	P value on $\ln(p_{2+}/p_{3+})$
Period		
1810–47 = 1871–1910	0+	0+
1848–70 = 1871–1910	0+	0+
1810–47 = 1848–70	0+	0+
Geographic type		
$T_2 = T_1$	.09	.32
$T_3 = T_1$	.04	.18
$T_4 = T_1$	.96	.59
$T_5 = T_1$	0+	0+
$T_2 = T_3$	.42	.58
$T_2 = T_4$	.04	.62
$T_2 = T_5$	0+	0+
$T_3 = T_4$	.02	.34
$T_3 = T_5$	0+	0+
$T_4 = T_5$	0+	0+

Note: There were no significant Type × Period interactions. p_{1+}, p_{2+}, and p_{3+} measure the magnitude of the deviation of a son's score from his father's if the son's score was higher than the father's when the difference was small, medium, and large, respectively. T_1–T_5 represent the different geographical types.

coefficients of eq. (9), table 6 the tests of significance, tables 7 and 8 the regression coefficients of eq. (10), and table 9 the corresponding tests of significance.

The higher p_{3+} and the lower p_{1+}, the more sons who made a better score than their fathers. Symmetrically, tables 7 and 8 present the probability for a son who made a better score to be near or far from his father: the higher p_{1-} and the lower p_{3-}, the more sons who scored lower experienced only a low-amplitude fall, or decline in social mobility; and, reciprocally, the lower p_{1-} and the higher p_{3-}, the more dramatic the fall was likely to be.

TABLE 7
Estimated Regression Coefficients for $\ln(p_{1-}/p_{3-})$ and $\ln(p_{2-}/p_{3-})$, for Men (N = 3,338)

Effect	Estimate (SE)
Intercept on $\ln(p_{1-}/p_{3-})$	4.565 (7.618)
Intercept on $\ln(p_{2-}/p_{3-})$	10.903 (7.256)
Geographic type	
T_1 on $\ln(p_{1-}/p_{3-})$	.785
T_1 on $\ln(p_{2-}/p_{3-})$	.696
T_2 on $\ln(p_{1-}/p_{3-})$	–.698
T_2 on $\ln(p_{2-}/p_{3-})$	–.497
T_3 on $\ln(p_{1-}/p_{3-})$	–1.328
T_3 on $\ln(p_{2-}/p_{3-})$	–.790
T_4 on $\ln(p_{2-}/p_{3-})$	.461
T_4 on $\ln(p_{1-}/p_{3-})$	.395
T_5 on $\ln(p_{1-}/p_{3-})$	.780
T_5 on $\ln(p_{2-}/p_{3-})$	.276
Domicile	
$D_s \neq D_f$ on $\ln(p_{1-}/p_{3-})$	.159 (.095)
$D_s = D_f$ on $\ln(p_{1-}/p_{3-})$	–.159
$D_s \neq D_f$ on $\ln(p_{2-}/p_{3-})$	–.104 (.090)
$D_s = D_f$ on $\ln(p_{2-}/p_{3-})$	.104
Age	
On $\ln(p_{1-}/p_{3-})$	.185 (.021)
On $\ln(p_{2-}/p_{3-})$	.013 (.020)
Period	
1810–47 on $\ln(p_{1-}/p_{3-})$	.239
1810–47 on $\ln(p_{2-}/p_{3-})$	.173
1848–70 on $\ln(p_{1-}/p_{3-})$	–.244
1848–70 on $\ln(p_{2-}/p_{3-})$	–.177
1871–1910 on $\ln(p_{1-}/p_{3-})$	.005
1871–1910 on $\ln(p_{2-}/p_{3-})$	–.004
Father's status	
f on $\ln(p_{1-}/p_{3-})$	–11.429 (18.040)
f on $\ln(p_{2-}/p_{3-})$	–24.857 (17.162)
f^2 on $\ln(p_{1-}/p_{3-})$	6.668 (10.811)
f^2 on $\ln(p_{2-}/p_{3-})$	14.783 (10.305)
Mother's status	
m on $\ln(p_{1-}/p_{3-})$	3.063* (1.228)
m on $\ln(p_{2-}/p_{3-})$	2.381* (1.195)

Note: For covariates of more than 2 items, tests are presented in table 10. Likelihood ratio of the model = 20.5 with 20 df ($p_{5\%}$ = .43). The m^2 term, not significant, was omitted. T_1–T_5 represent the different geographical types, f represents the father's status, and m represents the mother's status. $D_s \neq D_f$ and $D_s = D_f$ represent whether the residences of the son and father were or were not the same. p_{1-}, p_{2-}, and p_{3-} measure the magnitude of the deviation of a son's score from his father's if the son's score was lower than the father's when the difference was small, medium, and large, respectively.
*$p \leq .05$.

The deviations of sons who scored higher than their fathers can be inferred from tables 4 to 6. Again, we observed the differences between big cities, represented by type (5), and the rest of France: living in type (5) had a comparatively stimulating effect on the probabilities of a deviation of large magnitude. Specifically, in contrast with type (5), sons in type (1) had odds 1.5 higher for a small deviation than for a medium one, and 2.6 higher for a small one than for a large one. These odds ratios become 1.7 and 3.3, respectively, for type (2), 1.7 and 3.5 for type (3), and 1.4

TABLE 8
Estimated Regression Coefficients for Interactions of Geographic Type and Period on $\ln(p_{1-}/p_{3-})$ and $\ln(p_{2-}/p_{3-})$, for Men (N = 3,338)

Geographic type	Period	Effect on $\ln(p_{1-}/p_{3-})$	Effect on $\ln(p_{2-}/p_{3-})$
T_1	1810–47	.022	.094
T_1	1871–1910	–.053	–.006
T_2	1848–70	–.284	–.363
T_3	1810–47	–.155	–.140
T_3	1871–1910	.055	–.176
T_4	1848–70	.443	.236
T_5	1810–47	.503	.439
T_5	1871–1910	–.213	–.337
T_1	1848–70	.031	–.089
T_2	1810–47	–.248	–.349
T_2	1871–1910	.532	.711
T_3	1848–70	.100	.316
T_4	1810–47	–.122	–.045
T_4	1871–1910	–.321	–.191
T_5	1848–70	–.290	–.101

Note: Tests are presented in table 9. T_1–T_5 represent the different geographical types. p_{1-}, p_{2-}, and p_{3-} measure the magnitude of the deviation of a son's score from his father's if the son's score was lower than the father's when the difference was small, medium, and large, respectively.

TABLE 9
Chi-Square Tests of Pairwise Equality between Regression Coefficients: Effect on $\ln(p_{1-}/p_{3-})$ and $\ln(p_{2-}/p_{3-})$, for Men

Pairwise equality	P value on $\ln(p_{1-}/p_{3-})$	P value on $\ln(p_{2-}/p_{3-})$
Pairwise interactions		
1810–47 = 1871–1910	.39	.53
1848–70 = 1871–1910	.29	.43
1810–47 = 1848–70	.06	.15
Type $T_2 = T_1$	0+	0+
Type $T_3 = T_1$	0+	0+
Type $T_4 = T_1$	.43	.45
Type $T_5 = T_1$	.99	.25
Type $T_2 = T_3$	0+	.08
Type $T_2 = T_4$	0+	0+
Type $T_2 = T_5$	0+	.06
Type $T_3 = T_4$	0+	0+
Type $T_3 = T_5$	0+	0+
Type $T_4 = T_5$	.39	.59
Significant Type × Period interactions		
T_2 × 1848–70 = T_2 × 1871–1910	.12	.04
T_2 × 1848–70 = T_3 × 1848–70	.21	.02
T_2 × 1871–1910 = T_3 × 1871–1910	.22	.02
T_2 × 1871–1910 = T_5 × 1871–1910	.08	.01
T_4 × 1848–70 = T_4 × 1871–1910	.04	.23
T_2 × 1848–70 = T_4 × 1848–70	.03	.06
T_2 × 1871–1910 = T_4 × 1871–1910	.01	0+

and 2.6 for type (4). Thus, living in the most urbanized *départements* regrouped in type (5), compared with the rest of France, favors one's chances of outdistancing one's father. Moreover, types (2) and (3) were even worse places in contrast with types (1) and (4) in this respect. In types (1) and (4), sons were 0.8 times more likely to make a small deviation than a large one versus type (2), 0.7 versus type (3). Types (2) and (3) were thus the location of the smallest ascent of sons who scored higher than their fathers, type (5) was the best place from which to outdistance one's father, and types (1) and (4) were intermediate in this respect.

With time passing, sons who reached higher signing statuses than their fathers did so with larger and larger relative deviations: the coefficients of $\ln(p_{1+}/p_{3+})$ and $\ln(p_{2+}/p_{3+})$ kept decreasing, which meant that p_{1+} and p_{2+} decreased to the benefit of p_{3+}. Sons had 1.7 more odds for a small deviation than for a large one in 1810–47 versus 1848–70, and 3.1 in 1810–47 versus 1871–1910. Thus, the temporal trend is characterized by the acceleration after the 1870–71 war of the probability of outdistancing one's father, especially with a large deviation. Bonneuil (1997) showed that 1870–71 was also a turning point in the transformation of the French demographic landscape.

Again, the scores of the parents had no effect on the magnitude of the deviation, which means that sons of lower-scored fathers did not keep up with sons of higher-scored fathers. Living in a different *département* from one's father favored the probability of a large deviation, compared with living in the same *département*. As we found previously (see table 1), long-distance geographical migration concerned positively selected individuals more likely to experience social ascent, and that migration was the way to move around the system of social mobility specific to a location and an epoch. Age played no role in scoring higher or lower, but we found that marrying older enhanced a larger deviation from the father (see table 4). One can assume that the older grooms preferred achieving some social ascent before marrying, as well as having had more time to pursue their careers.

For sons who made lower scores than their fathers, tables 7 to 9 show a contrast between types (2) and (3) and the other types, which are themselves not significantly different from each other. These latter types prevented significantly lower scores compared with the more rural rest of France: for example, sons in type (2) were 2.2 times more likely to have a medium deviation than a small one, 2.0 for a large than for a medium deviation, compared with those in type (5). These odds ratios are 3.1 and 2.7, respectively, for type (3) versus type (5). Compared with the rest of France, in types (2) and (3), sons who scored lower were thus the most likely to outdistance their fathers.

The course of the century brought no significant change in the magnitude of the deviation for sons who scored lower. Interactions show that in rural type (2), compared with more urbanized types (3), (4), and (5), sons with lower scores than their fathers' were less protected against too large a drop in 1871–1910, a result that can reflect the influence of urbanization and its correlated larger number of higher-scored occupations (see table 8).

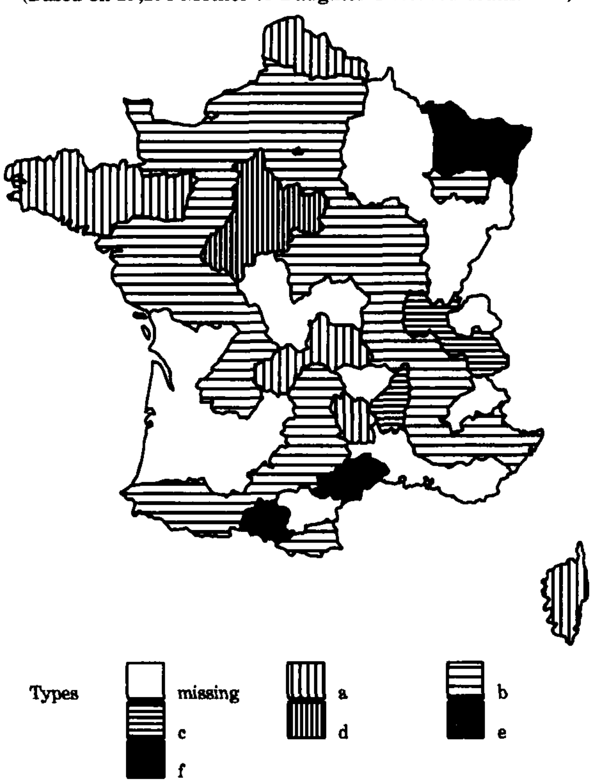
In sum, to be living in the same *département* as one's father, having a lower- or a higher-scored father, and being young or old had no significant effect for sons who scored lower. On the contrary, a higher-scored mother prevented her son from dropping too much lower. If mothers were no asset for scoring higher, they played a significant role in limiting a social fall that their sons might have experienced.

Women

Regrouping Départements

Just as we did for men, we defined a daughter's probabilities of making a higher, the same, or a lower score than her mother's, given the status of the mother (π_+, $\pi_=$ and π_-); and we quantified the relative deviation of daughters who scored higher through the probabilities p_{i+}, $i = 1, 2, 3$ of being in the first, second, or last third of the distribution $(d - m)/(1 - m)$, given that $d > m$; and the analogue probabilities p_{i-}, $i = 1, 2, 3$ of being in the first, second, or last third of the distribution $(m - d)/m$, given that $d < m$.

FIGURE 3
Regrouping of *Départements* into Six Types, according to Occupational Mobility, for Women (Based on 25,256 Mother-to-Daughter Observed Transitions)



- Type (a) corresponds to the periphery of France: Britany, Corrèze, Puy-de-Dôme, and Lozère in the Massif Central; Nord and Pas-de-Calais in the north; and Corsica.
- Type (b) regroups the Parisian Bassin, Picardy, Normandy, the Loire Valley and Poitou, part of Midi-Pyrénées, Burgundy, and the Rhône-Alpes region.
- Type (c) represents three rural *départements*: Ardèche, Ain, and Savoie.
- Type (d) is a compact region south of Ile-de-France.
- Type (e) is characteristic of Alsace-Lorraine, as well as of the southern *départements* of Ariège and Hérault.
- Type (f) represents Paris.

The regrouping of *départements*, conducted on the basis of the nine variables $\pi_i(T)$, $i \in \{+, =, -\}$ and T = 1810–47, 1848–70, 1871–1910, is represented on figure 3 and concerns sixty-two *départements* out of eighty-nine (twenty-seven *départements* did not satisfy the condition of thirty observations at each period).

Whereas, for men, Paris was classified as being similar to the other big cities of Lyon and Marseille, the female regional hierarchy distinguishes Paris from the rest of France. We found that only in Paris, could women have experienced a significant upward mobility. Rosental (1999) observed that only when women migrated to Paris were they able to escape family control and follow their own personal goals, thus opening wider occupational horizons.

Many regions, however, rank comparably in both hierarchies represented (see maps on figures 1 and 3, respectively): Industrialized Lorraine offered good social ascent to both men and women, the periphery of the Parisian Bassin in both cases takes an intermediate rank, while Brittany, Corsica, the Nord, and part of the Southwest and of Auvergne were places of low mobility for males as well as for females. Only some intermediate regions played different roles between the two maps: Poitou, Bourgogne, and the southern Alps, which were worse for males than for women relative to their respective scales; Seine-et-Marne (at the east of Paris), and a region north of Lyon, which were better. Though not perfect, overlapping between maps on figures 1 and 3 is good.

Type (b) extends beyond regions of medium urbanization: *départements* of this heterogeneous geographical group, such as in the north of Paris or the region of Lyon, were experiencing economic and urban development, while others were still rural (e.g., Midi-Pyrénées). The urban hierarchy we found for men was not present for women in the same way. Apart from Paris, which is very distinct from the rest of France, no clear distinction between rural and urban emerges. This observation is confirmed by type (d), the compact area southwest of Paris, which is not clearly identifiable. Types (c) and (a), however, are clearly rural, apart from Nord and Pas-de-Calais, which had begun its industrialization but was still inhabited by poor people.

Higher, Lower, or the Same as One's Mother

Tables 10 to 12 show that in type (d), daughters were less likely to reproduce their mothers' scores: daughters living in type (a) were 13.9 times more likely than type (d) to follow the occupations of their mothers than to score higher, 5.4 times more likely than to score lower; these numbers are 7.4 and 4.4, respectively, in type (b), 30.0 and 35.0 in type

TABLE 10
Estimated Regression Coefficients for $\ln(\pi_=/\pi_-)$ and $\ln(\pi_+/\pi_-)$, for Women (N = 13,465)

Effect	Estimate (*SE*)
Geographic type	
T_a on $\ln(\pi_=/\pi_-)$	−.081
T_a on $\ln(\pi_+/\pi_-)$	−.878
T_b on $\ln(\pi_=/\pi_-)$	−.295
T_b on $\ln(\pi_+/\pi_-)$	−.455
T_c on $\ln(\pi_=/\pi_-)$	1.790
T_c on $\ln(\pi_+/\pi_-)$	.228
T_d on $\ln(\pi_=/\pi_-)$	−1.765
T_d on $\ln(\pi_+/\pi_-)$	.071
T_e on $\ln(\pi_=/\pi_-)$	−.033
T_e on $\ln(\pi_+/\pi_-)$	−.554
T_f on $\ln(\pi_=/\pi_-)$	.384
T_f on $\ln(\pi_+/\pi_-)$	1.589
Period	
1810–47 on $\ln(\pi_=/\pi_-)$	−.138
1810–47 on $\ln(\pi_+/\pi_-)$	−.322
1848–70 on $\ln(\pi_=/\pi_-)$	.071
1848–70 on $\ln(\pi_+/\pi_-)$	.008
1871–1910 on $\ln(\pi_=/\pi_-)$	.067
1871–1910 on $\ln(\pi_+/\pi_-)$	.314
Mother's status	
m on $\ln(\pi_=/\pi_-)$	−.676 (1.476)
m on $\ln(\pi_+/\pi_-)$	.047 (1.439)
m^2 on $\ln(\pi_=/\pi_-)$	.206 (.898)
m^2 on $\ln(\pi_+/\pi_-)$	−3.077* (1.524)
Father's status	
f on $\ln(\pi_=/\pi_-)$	.064 (2.133)
f on $\ln(\pi_+/\pi_-)$	3.978* (2.018)
f^2 on $\ln(\pi_=/\pi_-)$	.206 (1.604)
f^2 on $\ln(\pi_+/\pi_-)$	−3.007* (1.524)
Domicile	
$D \neq D_f$ on $\ln(\pi_=/\pi_-)$	−.170* (.040)
$D \neq D_f$ on $\ln(\pi_+/\pi_-)$	−.002 (.037)
$D = D_f$ on $\ln(\pi_=/\pi_-)$	.170
$D = D_f$ on $\ln(\pi_+/\pi_-)$	.002

Note: For covariates of more than 2 items, tests are presented in table 11. Likelihood ratio of the model = 36.2 with 26 *df* ($p_{5\%}$ = .09). Age, not significant, was omitted. π_+, π_-, and $\pi_=$ are the probabilities that a daughter's occupational status is higher, lower, or equal to that of her mother. T_a–T_f represent the different geographical types, m represents the mother's status, and f represents the father's status, and $D \neq D_f$ and $D = D_f$ represent whether the residences of the daughter and mother were or were not the same.

(c), 10.7 and 5.6 in type (e), 3.2 and 8.6 in type (f). Daughters in type (f) were just behind type (d) when it came to scoring higher than their mothers' scores: daughters in type (f) had 4.4 more odds of scoring higher than their mothers, versus daughters in type (a), 2.3 in type (b), 9.5 in type (c), 3.3 in type (e). Types (a) and (b) had effects no different from type (f) on $\pi_-/\pi_=$; type (a), a group comprising rural enclaves and the Nord and Pas-de-Calais, was the place where daughters were more likely to score lower than their mothers or higher, compared with the rest of France.

Thus, compared with the rest of France, type (f), Paris, was the best all-around place for social ascent: the odds of scoring higher than the same score were the second best (behind type [d]), and the odds of avoiding scoring lower than the same were also the second best (behind type [c]). The dominance of types (d) and (f) echoes the urban dimension of female social mobility, which was different from that of men. Paris played a salient role, but major regional cities did not. In type (d), women were less likely to score as high as their mothers. Type (a) was the worst place for social ascent. Type (c) was the area where daughters assumed their mothers' occupations rather than scoring higher or lower: daughters from type (c) were 2.1 times more likely to score the same rather than higher and 6.5 times more likely to score the same rather than lower versus type (a); these numbers are 4.1 and 8.1, respectively, versus type (b), 30.0 and 35.0 versus type (d), 2.8 and 6.2 versus type (e), and 9.4 and 4.1 versus type (f).

TABLE 11
Geographic Area by Period Interactions: Effect on $\ln(\pi_=/\pi_-)$ and $\ln(\pi_+/\pi_-)$, for Women (N = 13,465)

Interaction	Estimate
Effect on $\ln(\pi_=/\pi_-)$	
Type T_a × Period 1810–47	−.087
Type T_a × Period 1848–70	−.019
Type T_a × Period 1871–1910	.106
Type T_b × Period 1810–47	−.377
Type T_b × Period 1848–70	−.099
Type T_b × Period 1871–1910	.476
Type T_c × Period 1810–47	.000
Type T_c × Period 1848–70	.212
Type T_c × Period 1871–1910	−.212
Type T_d × Period 1810–47	−.664
Type T_d × Period 1848–70	.029
Type T_d × Period 1871–1910	.635
Type T_e × Period 1810–47	.100
Type T_e × Period 1848–70	.466
Type T_e × Period 1871–1910	−.566
Type T_f × Period 1810–47	1.028
Type T_f × Period 1848–70	−.590
Type T_f × Period 1871–1910	−.438
Effect on $\ln(\pi_+/\pi_-)$	
Type T_a × Period 1810–47	−.235
Type T_a × Period 1848–70	.152
Type T_a × Period 1871–1910	.082
Type T_b × Period 1810–47	−.396
Type T_b × Period 1848–70	.173
Type T_b × Period 1871–1910	.223
Type T_c × Period 1810–47	−.526
Type T_c × Period 1848–70	.114
Type T_c × Period 1871–1910	.412
Type T_d × Period 1810–47	.009
Type T_d × Period 1848–70	−.115
Type T_d × Period 1871–1910	.106
Type T_e × Period 1810–47	−.018
Type T_e × Period 1848–70	.387
Type T_e × Period 1871–1910	−.369
Type T_f × Period 1810–47	1.166
Type T_f × Period 1848–70	−.712
Type T_f × Period 1871–1910	−.454

Note: Tests are presented in table 12. π_+, π_-, and $\pi_=$ are the probabilities that a daughter's occupational status is higher, lower, or equal to that of her mother. T_a–T_f represent the different geographical types.

TABLE 12
Chi-Square Tests of Pairwise Equality between Regression Coefficients: Effect on $\ln(\pi_=/\pi_-)$ and $\ln(\pi_+/\pi_-)$, for Women (N = 13,465)

Pairwise equality	*P* value on $\ln(\pi_=/\pi_-)$	*P* value on $\ln(\pi_+/\pi_-)$
1810–47 = 1871–1910	.27	0+
1848–70 = 1871–1910	.97	0+
1810–47 = 1848–70	.29	.04
Type T_b = Type T_a	.08	0+
Type T_c = Type T_a	0+	0+
Type T_d = Type T_a	0+	0+
Type T_e = Type T_a	.78	.06
Type T_f = Type T_a	.19	0+
Type T_b = Type T_c	0+	0+
Type T_b = Type T_d	0+	0+
Type T_b = Type T_e	.03	.41
Type T_b = Type T_f	.04	0+
Type T_c = Type T_d	0+	.30
Type T_c = Type T_e	0+	0+
Type T_c = Type T_f	0+	0+
Type T_d = Type T_e	0+	0+
Type T_d = Type T_f	0+	0+
Type T_e = Type T_f	.22	0+

Note: π_+, π_-, and $\pi_=$ are the probabilities that a daughter's occupational status is higher, lower, or equal to that of her mother. T_a–T_f represent the different geographical types.

Throughout the century, social mobility kept improving (see coefficients on table 12). We note that daughters had 1.9 more odds of scoring higher rather than lower in 1871–1910 than in 1848–70.

Interactions (on table 13) show that the patterns of the beginning of female social ascent were not parallel in geographical types. On the contrary, women in urban type (b) benefited from an acceleration of social mobility, compared with rural types (e) and (f). We also note the advantage of rapidly increasing urban over rural wages.

The influence of the father and mother was more salient than for sons. We observed significant nonlinear effects: the odds ratio $\pi_=/\pi_-$ is maximum at low m, indicating that daughters with low-scored mothers had higher odds than others of reproducing their mothers' scores than of scoring even lower. On the contrary, daughters with fathers who scored at ≈0.7 (maximum of the parabola $3.978f - 3.007f^2$ for π_+/π_-) were more likely to score higher than lower. Women were thus submitted to two effects: the status of their mothers led them to reproduce a "middle-scored class," whereas the "middle-scored class" of their fathers tended to make them score higher.

Finally, those migrant daughters who lived in a *département* different from that of their parents, scored lower than the same, compared with sedentary daughters (the odds ratio is 1.4). The effect on π_+/π_- is not significant. Thus, the risk of scoring lower in migration was of the same magnitude for both men and women; but, unlike men, women did not benefit from a better chance to score higher than lower.

TABLE 13
Chi-Square Tests of Pairwise Equality between Regression Coefficients: Effect on $\ln(\pi_=/\pi_-)$ and $\ln(\pi_+/\pi_-)$ and Significant Type × Period Interactions, for Women

Pairwise equality	*P* value on $\ln(\pi_=/\pi_-)$	*P* value on $\ln(\pi_+/\pi_-)$
T_b × 1810–47 = T_b × 1848–70	.22	0+
T_f × 1810–47 = T_f × 1848–70	.04	0+
T_b × 1848–70 = T_b × 1871–1910	0+	.73
T_a × 1810–47 = T_f × 1810–47	.07	.01
T_b × 1810–47 = T_d × 1810–47	.04	.01
T_c × 1810–47 = T_d × 1810–47	.06	.02
T_c × 1810–47 = T_e × 1810–47	.10	0+
T_c × 1810–47 = T_f × 1810–47	.02	.04
T_b × 1848–70 = T_e × 1848–70	0+	.24
T_c × 1848–70 = T_f × 1848–70	.04	.02
T_e × 1848–70 = T_f × 1848–70	.02	0+
T_a × 1871–1910 = T_e × 1871–1910	0+	.04
T_b × 1871–1910 = T_e × 1871–1910	0+	0+
T_c × 1871–1910 = T_d × 1871–1910	0+	.21
T_c × 1871–1910 = T_f × 1871–1910	.57	.02
T_d × 1871–1910 = T_f × 1871–1910	.01	.07
T_c × 1810–47 = T_c × 1848–70	.43	.03
T_e × 1848–70 = T_e × 1871–1910	0+	.01
T_a × 1810–47 = T_b × 1810–47	.04	.28
T_b × 1810–47 = T_c × 1810–47	.02	.53
T_b × 1810–47 = T_e × 1810–47	0+	.01
T_b × 1810–47 = T_f × 1810–47	.02	0+
T_c × 1810–47 = T_e × 1810–47	.62	.04
T_d × 1810–47 = T_e × 1810–47	.04	.89
T_a × 1848–70 = T_f × 1848–70	.18	.02
T_b × 1848–70 = T_f × 1848–70	.22	0+
T_d × 1848–70 = T_e × 1848–70	.17	.02
T_a × 1871–1910 = T_b × 1871–1910	0+	.27
T_b × 1871–1910 = T_c × 1871–1910	0+	.35
T_b × 1871–1910 = T_f × 1871–1910	0+	.02
T_c × 1871–1910 = T_e × 1871–1910	.18	0+
T_d × 1871–1910 = T_e × 1871–1910	0+	.04

Note: π_+, π_-, and $\pi_=$ are the probabilities that a daughter's occupational status is higher, lower, or equal to that of her mother. T_a–T_f represent the different geographical types.

Daughters Who Scored Higher

Tables 14 to 16 show that types (a), (e), and (f) are not significantly different for p_{1+}/p_{3+}; neither are types (a), (b), (c), and (d) for p_{2+}/p_{3+}. We can infer that the effect of living in Paris was ambiguous: for the daughters who made higher scores than their mothers, life in the big city favored small over medium deviations and large over medium ones; daughters were 19.1 times more likely to have a small rather than a medium deviation and 13.1 times more likely to have a large rather than a medium deviation versus type (a); these numbers are 7.7 and 9.6, respectively, versus type (b), 210.7 and 12.2 versus type (c), 1.7 and 14.7 versus type (d), and 5.3 and 3.7 versus type (e). Paris also favored small over large deviations compared with type (c) (odds ratio of 17.2), and large over small deviations compared with type (d) (odds ratio of 8.6). Regarding Paris versus the other types, the odds ratios between small and large deviations are not significant. Type (e) is not significantly different from type

(f) on p_{1+}/p_{3+} and is close to type (f) on p_{2+}/p_{3+}. The pattern of ascending social mobility in type (e) is thus rather close to that in Paris, with intensity (measured by odds ratios) just behind that of Paris, except that medium deviations are more probable than small ones in type (e) versus type (d). Type (d) is second to Paris concerning the preference of small deviations over medium ones and is similar to types (a) and (b) for the comparison of large and medium deviations. On the opposite spectrum, type (c) favored medium deviations over small ones: 11.0 versus type (a), 27.7 versus type (b), 123.3 versus type (d), 39.6 versus type (e), and 210.7 versus type (f). Type (c) also favored medium over large deviations: 3.3 versus type (e), 12.2 versus type (f), and not significantly different for types (a), (b), and (c). In summary, compared with the rest of France, living in Paris

TABLE 14
Estimated Regression Coefficients for $\ln(p_{1+}/p_{3+})$ and $\ln(p_{2+}/p_{3+})$, for Women (N = 3,600)

Effect	Estimate (*SE*)	
Type		
T_a on $\ln(p_{1+}/p_{3+})$	–.178	
T_a on $\ln(p_{2+}/p_{3+})$	.600	
T_b on $\ln(p_{1+}/p_{3+})$	.431	
T_b on $\ln(p_{2+}/p_{3+})$	.288	
T_c on $\ln(p_{1+}/p_{3+})$	–2.644	
T_c on $\ln(p_{2+}/p_{3+})$	.533	
T_d on $\ln(p_{1+}/p_{3+})$	2.350	
T_d on $\ln(p_{2+}/p_{3+})$	.712	
T_e on $\ln(p_{1+}/p_{3+})$	–.160	
T_e on $\ln(p_{2+}/p_{3+})$	–.663	
T_f on $\ln(p_{1+}/p_{3+})$	.201	
T_f on $\ln(p_{2+}/p_{3+})$	–1.470	
Period		
1810–47 on $\ln(p_{1+}/p_{3+})$	.468	
1810–47 on $\ln(p_{2+}/p_{3+})$	–.072	
1848–70 on $\ln(p_{1+}/p_{3+})$	–.183	
1848–70 on $\ln(p_{2+}/p_{3+})$	.045	
1871–1910 on $\ln(p_{1+}/p_{3+})$	–.286	
1871–1910 on $\ln(p_{2+}/p_{3+})$	.027	
Status of mother		
m on $\ln(p_{1+}/p_{3+})$	–4.815	(4.171)
m on $\ln(p_{2+}/p_{3+})$	.761	(2.217)
Status of father		
f on $\ln(p_{1+}/p_{3+})$	13.748	(8.131)
f on $\ln(p_{2+}/p_{3+})$	11.489	(9.734))
f^2 on $\ln(p_{1+}/p_{3+})$	–8.960	(5.429)
f^2 on $\ln(p_{2+}/p_{3+})$	–8.235	(6.574)
Domicile		
$D \neq D_f$ on $\ln(p_{1+}/p_{3+})$	–.000	(.067)
$D \neq D_f$ on $\ln(p_{2+}/p_{3+})$	–.023	(.074)
$D = D_f$ on $\ln(p_{1+}/p_{3+})$	.000	
$D = D_f$ on $\ln(p_{2+}/p_{3+})$	.023	

Note: For covariates of more than 2 items, tests are presented in table 15. Likelihood ratio of the model = 27.23 with 28 *df* ($p_{5\%}$ = .51). m^2 was not significant and was withdrawn. Age, not significant, was omitted. p_{1+}, p_{2+}, and p_{3+} measure the magnitude of the deviation of a daughter's score from her mother's when the daughter's score was higher than the mother's when the difference was small, medium, and large, respectively. f represents the father's status, and m represents the mother's status. $D \neq D_f$ and $D = D_f$ represent whether the residences of the daughter and mother were or were not the same. T_a–T_f represent the different geographical types.

TABLE 15
Estimated Regression Coefficients for $\ln(p_{1+}/p_{3+})$ and $\ln(p_{2+}/p_{3+})$, for Women (N = 3,600): Interactions

		Effect	
Geographic type	Period	on $\ln(p_{1+}/p_{3+})$	on $\ln(p_{2+}/p_{3+})$
T_a	1810–47	–.211	–.369
T_a	1871–1910	.075	.255
T_b	1848–70	–.025	–.083
T_c	1810–47	–.153	–.538
T_c	1871–1910	.314	.427
T_d	1848–70	.292	.448
T_e	1810–47	–.566	.342
T_e	1871–1910	.688	–.158
T_f	1848–70	–.121	–.405
T_a	1848–70	.136	.113
T_b	1810–47	.026	–.091
T_b	1871–1910	–.001	.173
T_c	1848–70	–.160	.110
T_d	1810–47	.876	.496
T_d	1871–1910	–1.167	–.944
T_e	1848–70	–.122	–.184
T_f	1810–47	.029	.158
T_f	1871–1910	.092	.246

Note: Tests are presented in table 16. p_{1+}, p_{2+}, and p_{3+} measure the magnitude of the deviation of a daughter's score from her mother's when the daughter's score was higher than the mother's when the difference was small, medium, and large, respectively. T_a–T_f represent the different geographical types.

favored small and large deviations over medium ones, and small over large ones. Types (e) and (d) more or less followed this pattern, and the other types were mixed.

The social mobility of those daughters who scored higher than their mothers did not change much in the course of the century. The only significant change was the decrease of the odds p_{1+}/p_{3+} from 1810–47 to 1848–71, revealing that small deviations decreased in favor of large ones between these two periods. Female social mobility was thus stagnant compared with that of men. Interactions show that, compared with other types, in type (d), south of Ile-de-France, female social mobility accelerated in favor of large deviations rather than small and medium ones (see table 15).

Age, migration, and fathers' and mothers' scores had no significant effect, corroborating the finding that women had very few chances to break loose from the social mobility of the time. They did not have the same freedom as men did to escape the local conditions by migrating; they could not keep up with daughters of higher-scored mothers, and conditions did not change much in the course of the century.

Daughters Who Scored Lower

For daughters who scored lower than their mothers, types (a) and (d), constituting a substantial part of the country's center and periphery, contrast with the rest of France concerning p_{1-}/p_{3-} (see tables 17 to 19). Type (c) is isolated from the rest concerning p_{2-}/p_{3-}. Comparing types (c) and (d) or (f) tells us about this division of France: versus type

TABLE 16
Chi-Square Tests of Pairwise Equality between Regression Coefficients: Effect on $\ln(p_{1+}/p_{3+})$ and $\ln(p_{2+}/p_{3+})$, for Women

Pairwise equality	*P* value on $\ln(p_{1+}/p_{3+})$	*P* value on $\ln(p_{2+}/p_{3+})$
Pairwise tests		
1810–47 = 1871–1910	0+	.73
1848–70 = 1871–1910	.68	.92
1810–47 = 1848–70	.04	.69
Type T_b = Type T_a	0+	.08
Type T_c = Type T_a	0+	.77
Type T_d = Type T_a	0+	.75
Type T_e = Type T_a	.95	0+
Type T_f = Type T_a	.19	0+
Type T_b = Type T_c	0+	.25
Type T_b = Type T_d	0+	.21
Type T_b = Type T_e	0+	0+
Type T_b = Type T_f	.33	0+
Type T_c = Type T_d	0+	.63
Type T_c = Type T_e	0+	0+
Type T_c = Type T_f	0+	0+
Type T_d = Type T_e	0+	0+
Type T_d = Type T_f	0+	0+
Type T_e = Type T_f	.25	.09
Significant Type × Period interactions		
T_c × 1810–47 = T_c × 1871–1910	.66	.04
T_d × 1848–70 = T_d × 1871–1910	0+	.02
T_d × 1848–70 = T_d × 1871–1910	0+	.02
T_e × 1871–1910 = T_c × 1871–1910	.05	.95
T_d × 1810–47 = T_e × 1810–47	.02	.83
T_d × 1871–1910 = T_f × 1871–1910	0+	.43
T_a × 1810–47 = T_d × 1810–47	.05	.16
T_a × 1871–1910 = T_d × 1871–1910	.08	0+
T_b × 1871–1910 = T_d × 1871–1910	0+	0+
T_c × 1871–1910 = T_d × 1871–1910	.04	0+
T_d × 1871–1910 = T_e × 1871–1910	0+	.09

Note: p_{1+}, p_{2+}, and p_{3+} measure the magnitude of the deviation of a daughter's score from her mother's when the daughter's score was higher than the mother's when the difference was small, medium, and large, respectively. T_a–T_f represent the different geographical types.

TABLE 17
Estimated Regression Coefficients for $\ln(p_{1-}/p_{3-})$ and $\ln(p_{2-}/p_{3-})$, for Women (N = 6,279)

Effect	Estimate (*SE*)
Type	
T_a on $\ln(p_{1+}/p_{3-})$	–1.855
T_a on $\ln(p_{2-}/p_{3-})$	–.192
T_b on $\ln(p_{1-}/p_{3-})$	–.820
T_b on $\ln(p_{2-}/p_{3-})$	–.049
T_c on $\ln(p_{1-}/p_{3-})$	.371
T_c on $\ln(p_{2-}/p_{3-})$	1.991
T_d on $\ln(p_{1-}/p_{3-})$	–1.642
T_d on $\ln(p_{2-}/p_{3-})$	–1.237
T_e on $\ln(p_{1-}/p_{3-})$	.149
T_e on $\ln(p_{2-}/p_{3-})$	–.706
T_f on $\ln(p_{1-}/p_{3-})$	3.798
T_f on $\ln(p_{2-}/p_{3-})$	.194
Period	
1810–47 on $\ln(p_{1-}/p_{3-})$	.835
1810–47 on $\ln(p_{2-}/p_{3-})$	–.165
1848–70 on $\ln(p_{1-}/p_{3-})$	–.613
1848–70 on $\ln(p_{2-}/p_{3-})$	.042
1871–1910 on $\ln(p_{1-}/p_{3-})$	–.223
1871–1910 on $\ln(p_{2-}/p_{3-})$	.123
Status of mother	
m on $\ln(p_{1-}/p_{3-})$	28.212*(12.460)
m on $\ln(p_{2-}/p_{3-})$	24.476 (16.918)
m^2 on $\ln(p_{1-}/p_{3-})$	–21.778* (9.403)
m^2 on $\ln(p_{2-}/p_{3-})$	–18.982 (12.621)
Status of father	
f on $\ln(p_{1-}/p_{3-})$	–1.571 (3.233)
f on $\ln(p_{2-}/p_{3-})$	–2.389 (3.967)
f^2 on $\ln(p_{1-}/p_{3-})$	1.277 (2.177)
f^2 on $\ln(p_{2-}/p_{3-})$	1.769 (2.706)
Domicile	
$D_s \neq D_f$ on $\ln(p_{1-}/p_{3-})$	–.017 (.059)
$D_s \neq D_f$ on $\ln(p_{2-}/p_{3-})$	–.005 (.077)
$D_s = D_f$ on $\ln(p_{1-}/p_{3-})$	.017
$D_s = D_f$ on $\ln(p_{2-}/p_{3-})$	.005

Note: For covariates of more than 2 items, tests are presented in table 18. Likelihood ratio of the model = 40.35 with 24 *df* ($p_{5\%}$ = .02). Age, not significant, was omitted. p_{1-}, p_{2-}, and p_{3-} measure the magnitude of the deviation of a daughter's score from her mother's if the daughter's score was higher than the mother's when the difference was small, medium, and large, respectively. f represents the father's status, and m represents the mother's status. $D_s \neq D_f$ and $D_s = D_f$ represent whether the residences of the daughter and mother were or were not the same.
*p < .05.

(c), daughters from Paris were 436.9 times more likely to have a small deviation downward than a medium one, 30.8, to have a large rather than a small one, 14.2 to have a large rather than a medium one. Type (c) was thus a place where falls were of comparatively medium magnitude, whereas Paris, or type (d), favored comparatively small and large deviations.

As for time passing, from 1848–70 to 1871–1910, the probability of a small fall rather than a large one increased. Interactions show that the evolution of Paris did not parallel those of the other types (see table 18). Parisian women were relatively more and more protected from important falls with time passing, thus reasserting the advantage of working in the city.

Daughters of medium-scored mothers (≈0.65, maximum of the parabola 28.212 m – 21.778 m^2) were relatively protected from a small, compared with a large, fall. Neither age, nor migration, nor the score of one's father had any influence on the downward deviation of one's mother's score. For women, both the score of the father and migration seem to have acted in a binary way: these variables helped the daughter make a better score than her mother's, whatever the deviation, but once such a goal was attained there was no further incentive to outdistance the mother.

Homogamy in Social Mobility

Erikson and Goldthorpe (1993) pointed out that female social mobility must be understood as it relates to the occupational status of the husband. Our study, restricted to social mobility on the wedding day, shows a significant homogamy in terms of social mobility (see table 20). Social mobilities of bride and groom are not independent (314.0 with 16 *df* for table 20, 623.3 with 4 *df* for the nine subtotals over time). When we applied eq. (7) separately for men and women we were able to explain the margins of table 20. To evaluate the degree of homogamy in social mobility, we built a logit model explaining, as before, the probabilities of a son's scoring higher, lower, or the same as his father, as a function of the respective scores of the groom's and bride's fathers and mothers, of the ages of the bride and groom, of time, of the geographical type for men (as defined on figure 1), of living in a *département* different from that of the bride's and groom's parents, and of the social mobility of the bride, reduced to scoring higher than ($d > m$), identical to ($d = m$), or lower than ($d < m$) the mother.

Table 21 presents the relationship between the bride's social mobility and the groom's, after the effects of geography, time, age, parents' occupations, and migration. Brides scoring higher than their mothers were more likely (odds ratio = 2.7) than brides scoring the same to marry grooms scoring higher than their fathers, compared with grooms scoring the same. The brides were also more likely to marry grooms scoring higher rather than lower, compared with brides scoring lower (odds ratio = 1.7).

Chi-square tests show that all coefficients in table 21 are significantly different from each other, a result suggesting the existence of some homogamy in terms of social mobility. Interactions (unpublished) show that this phenomenon varied in space, but not significantly in time. For example, in type (1) (rural southern France), brides scoring the same as their mothers were 1.9 times more likely to marry a groom who scored the same as his father than a groom scoring higher, compared with brides scoring higher than their mothers. Brides scoring the same as their mothers were 2.1 times more likely to marry a man scoring the same as, rather than higher, in type (1), compared with type (5) (big cities). Homogamy contributes to making figures 1 and 3 resemble each other, whereas inequalities between genders make them look different.

TABLE 18
Geographic Type by Period Interactions, for Women
(N = 6,279)

Geographic type	Period	Effect on $\ln(p_{1-}/p_{3-})$	Effect on $\ln(p_{2-}/p_{3-})$
T_a	1810–47	−1.502	−.272
T_a	1848–70	.518	−.121
T_a	1871–1910	.984	.393
T_b	1810–47	−1.323	−.345
T_b	1848–70	.835	.119
T_b	1871–1910	.488	.226
T_c	1810–47	−1.935	−.229
T_c	1848–70	1.234	.743
T_c	1871–1910	.701	−.514
T_d	1810–47	−1.177	−.593
T_d	1848–70	.526	−.093
T_d	1871–1910	.652	.686
T_e	1810–47	−.959	.765
T_e	1848–70	.642	.294
T_e	1871–1910	.317	−1.059
T_f	1810–47	6.897	.674
T_f	1848–70	−3.754	−.942
T_f	1871–1910	−3.143	.268

Note: Tests are presented in table 19. T_a–T_f represent the different geographical types.

TABLE 19
Chi-Square Tests of Equality between Regression Coefficients: Effect on $\ln(p_{1-}/p_{3-})$ and $\ln(p_{2-}/p_{3-})$, for Women

Pairwise equality	*P* value on $\ln(p_{1-}/p_{3-})$	*P* value on $\ln(p_{2-}/p_{3-})$
Pairwise tests		
1810–47 = 1871–1910	.97	.99
1848–70 = 1871–1910	.01	.71
1810–47 = 1848–70	.97	.99
Type T_b = Type T_a	0+	.24
Type T_c = Type T_a	0+	0+
Type T_d = Type T_a	.32	0+
Type T_e = Type T_a	0+	.03
Type T_f = Type T_a	.93	.99
Type T_b = Type T_c	0+	0+
Type T_b = Type T_d	0+	0+
Type T_b = Type T_e	0+	0+
Type T_b = Type T_f	.94	1.00
Type T_c = Type T_d	0+	0+
Type T_c = Type T_e	.47	0+
Type T_c = Type T_f	.96	.98
Type T_d = Type T_e	0+	.10
Type T_d = Type T_f	.93	.99
Type T_e = Type T_f	.95	.99
Significant Type × Period interactions		
T_e × 1847–71 = T_e × 1871–1910	.37	.02
T_b × 1810–47 = T_e × 1810–47	.19	0+
T_d × 1810–47 = T_e × 1810–47	.95	.01
T_a × 1871–1910 = T_c × 1871–1910	.48	.03
T_b × 1871–1910 = T_c × 1871–1910	.53	.03
T_c × 1871–1910 = T_d × 1871–1910	.90	.01
T_a × 1810–47 = T_e × 1810–47	.11	.02
T_c × 1810–47 = T_e × 1810–47	.03	.04
T_a × 1871–1910 = T_b × 1871–1910	.04	.54
T_a × 1871–1910 = T_e × 1871–1910	.05	0+
T_b × 1871–1910 = T_e × 1871–1910	.44	0+
T_d × 1871–1910 = T_e × 1871–1910	.22	0+

Note: T_a–T_f represent the different geographical types.

Conclusion: Social Milieu, Geographical Dimension, and Development

The quantitative analysis of intergenerational occupational change offers a measure of regional differentials in nineteenth-century France, a task that Lepetit (1986), among others, addressed from the viewpoint of other demographic behaviors. Such scholars used cross-sectional indi-

TABLE 20
Social Mobility of TRA Couples (N = 10,611)

Mobility	1810–47	1848–70	1871–1900	Total
		$d > m$		
$s > f$				
Actual	185	348	717	1,250
Expected	130.6	234.1	493.6	841
$s = f$				
Actual	194	243	477	912
Expected	272.7	373.6	690.2	1,354
$s < f$				
Actual	125	201	270	596
Expected	100.7	178.3	280.2	563
		$d = m$		
$s > f$				
Actual	123	196	280	599
Expected	168.3	273.6	430.2	853
$s = f$				
Actual	437	553	818	1,788
Expected	351.1	427.6	601.5	1,373
$s < f$				
Actual	89	143	178	410
Expected	129.6	200.8	244.3	571
		$d < m$		
$s > f$				
Actual	415	399	572	1,386
Expected	424.1	445.2	645.3	1,541
$s = f$				
Actual	878	733	899	2,510
Expected	885.2	721.8	902.3	2,482
$s < f$				
Actual	343	374	443	1,160
Expected	326.7	339.0	366.4	1,032

Note: Expected = the expected numbers under the hypothesis of independence per period. See Appendix A for definition of TRA. s = status of son; f = status of father; m = status of mother; d = status of daughter.

TABLE 21
Regression Coefficients of Bride's Social Mobility on Groom's Social Mobility (N = 10,611)

Effect	Estimate
$d = m$ on $\ln(\pi_=/\pi_-)$	.421
$d > m$ on $\ln(\pi_=/\pi_-)$	–.391
$d < m$ on $\ln(\pi_=/\pi_-)$	–.030
$d = m$ on $\ln(\pi_+/\pi_-)$	.051
$d > m$ on $\ln(\pi_+/\pi_-)$	.241
$d < m$ on $\ln(\pi_+/\pi_-)$	–.291

Note: Likelihood ratio of the model = 20,494.8 with 262 df (p = .08). d = daughter's status; m = mother's status. Chi-square tests show that these six coefficients are all significantly different from each other.

cators, either macroscopic (urbanization rates) or microscopic (literacy rates or family structures). We built a linear continuous scale of occupations based on literacy in a period of transition, a unique moment for using literacy to characterize social positions. This scale avoids our having to define a priori categories; it enables us to compare designations of occupations across time and space; it produces consistent patterns and highlights the effects of space, time, migration, and parentage on the transitions from father to son and mother to daughter. Indeed, this procedure adds evidence that there was no national homogeneous pattern in the change of social mobility, but that social trajectories were spatially differentiated.

Throughout the nineteenth century, French society was becoming more open, a condition that accelerated in the last quarter of the century. In general, the probability of scoring lower also decreased. The mother's occupation played the role of a "pawl" effect (Thélot 1982): the higher the mother's score, the shorter the deviation of the son from his father when the son obtained a lower-scored occupation. For daughters, the influence of the mother is the most visible for middle-scored mothers. However, the parents' scores did not help their children much to score better, implying both that this social capital was less important than local conditions, and that children of low-scored parents had no chance of keeping up with children of higher-scored parents. After taking into account the effects of time and location, we found that social mobility in this century was thus reproducing social inequalities.

We emphasized the regional heterogeneity of social mobility, pointing out the limitation inherent in any study limited to the national scale. The urban hierarchy is a salient feature of social mobility for both genders: the probabilities of scoring the same and scoring lower decreased with urbanization, whereas the probabilty of scoring higher increased. The inertia inherent in rural regions, where social inequalities continued to prevail, provided the key to geographical mobility in social ascent. This geographical component of social mobility should no longer be ignored in studies of social mobility. Migration emerges as a first-order determinant for men, allowing them access to a higher status than would have been likely if they had remained in the *département* of their fathers. Migration played a role for women by preventing them from making a downward deviation to a lower-scored occupation than their mothers'. Migration could, in fact, be brought about by the fear of "falling down," which resulted in the search for regions where there were more higher-scored jobs. We would not have noticed this result if we had examined data at the national level.

We classified *départements* according to the range of social change of their inhabitants. In one approach, mobility in France was explored through macroeconomic variables (e.g., wages) or microeconomic variables (e.g., family structures). Our analysis delineates gradients comparable to those in Lepetit (1986) and goes beyond the usual contrasts of northeast/southwest (Le Roy Ladurie 1973; Chartier 1992), urban/rural (Weber 1976), center/periphery (Le Bras 1986), or hinterland/seaside (Fox 1971). Our classification reflects labor economics. The connection we revealed between migration and social mobility could be interpreted in terms of workers moving to regions close enough and offering better salaries. Goreux (1956) favored this interpretation by comparing wage inequalities and migration in nineteenth-century France. In this study, we have no data for a further discussion of the economic dimension of social mobility and are content to estimate flows, situating them in space, time, age, and family background. We tried to safeguard the richness of social mobility, which is better rendered through correspondences. A whole set of possibilities was offered to sons or daughters so they could attain the same status as their parents'. Our econometric analysis reveals the structure of these sets, which, varying in space and time, delineate the historical development of France and renew the anlysis of French social mobility, traditionally based on synthetic indicators that oppose rich to poor, modern to archaic, and developed to underdeveloped regions.

APPENDIX A*
Composition of the 3,000 Families Survey Data Set

The 3,000 Families Survey was initiated by Jacques Dupâquier and Denis Kessler (1992). This survey was intended to reconstitute the descending genealogies of 3,000 couples married in France between 1803 and 1832, whose family names begin with the letters *T, R,* and *A* (e.g., Travers or Tranchant). The survey covered 45,000 marriages celebrated throughout France between 1803 and 1902. Each marriage included a TRA spouse (brides were recorded in the marriage certificates under their parents' names). Each certificate conveys information on both spouses and both sets of parents at the time of the wedding: places of residence, occupations, ages, and, for the spouses only, places and dates of birth. In addition, we know whether or not each of these six people signed the certificate.

The TRA marriages were collected systematically. Because the French civil-registration system was of good quality, and the rates of illegitimacy and emigration were very low at that time, the TRA collection provides an excellent method of studying patrilinear descending genealogies. However, unmarried TRA individuals and children of TRA women who married men who were not TRA are not included in the data set.

The fact that marriage certificates are linked to each other when they belong to the same genealogy makes it possible to compare a certificate of a TRA spouse with those of his or her parents at the parents' wedding. The same can be done with grandparents or uncles and aunts. In this article, we compared only the two generations of parents and their children, by means of their respective marriage certificates.

APPENDIX B
Classification of Occupations on the Signing-Status Scale: Designation and Frequency of Occupation

Code	Occupation	Frequency
	Male	
0.174	*Colon* (tenant farmer)	23
0.281	*Gagiste* (pawnbroker)	57
0.308	*Métayer* (tenant farmer)	26
0.400	*Brasseur* (brewer)	35
0.404	*Laboureur* (plowman)	599
0.444	*Portefaix* (porter)	18
0.467	*Batelier* (boatman)	15
0.478	*Berger* (shepherd)	113
0.500	*Aide* (hatter's assistant)	36
0.539	*Journalier* (day laborer)	1,059
0.545	*Charretier* (carter)	134
0.555	*Domestique* (domestic)	818
0.573	*Scieur* (sawyer)	75
0.583	*Bûcheron* (woodcutter)	24
0.625	*Fermier* (farmer)	40
0.626	*Manœuvre* (unskilled worker)	115
0.633	*Terrassier* (unskilled construction worker)	30
0.636	*Fileur* (spinner)	44
0.667	*Retraité* (pensioner)	18
0.673	*Manouvrier* (day worker)	275
0.684	*Tisserand* (weaver)	566
0.684	*Charbonnier* (coal man)	19
0.685	*Cultivateur* (farmer)	5,738
0.697	*Marin* (sailor)	152
0.706	*Peigneur* (carder)	17
0.725	*Tuilier* (tile maker)	40
0.731	*Vigneron* (wine grower)	320
0.733	*Compagnon* (craftsman)	15
0.750	*Cordier* (rope maker)	20
0.750	*Maçon* (bricklayer)	488
0.752	*Meunier* (miller)	157
0.757	*Carrier* (quarryman)	37
0.768	*Charpentier* (carpenter)	263
0.769	*Ancien militaire* (former serviceman)	15
0.771	*Garçon* (waiter)	266
0.773	*Coutelier* (cutler)	22
0.775	*Tailleur* (tailor)	383
0.778	*Ménager* (houseworker)	27
0.789	*Soldat* (soldier)	76
0.790	*Agriculteur* (farmer)	162
0.794	*Sabotier* (clog maker/clog seller)	131
0.804	*Ouvrier* (worker)	618
0.812	*Fendeur* (splitter)	16
0.816	*Voiturier* (carrier)	38
0.822	*Cantonnier* (road mender)	73
0.823	*Forgeron* (blacksmith)	96
0.823	*Drapier* (clothier)	17
0.836	*Jardinier* (gardener)	232
0.838	*Conducteur* (operator)	37
0.844	*Sans profession* (without occupation)	77
0.846	*Cordonnier* (shoe repairer)	390
0.858	*Propriétaire* (owner)	732
0.863	*Charron* (wheelwright)	182
0.867	*Plâtrier* (plasterer)	45
0.881	*Maréchal* (farrier)	185
0.882	*Bonnetier* (stocking maker)	17
0.889	*Papetier* (stationer)	18
0.892	*Valet* (servant)	37
0.892	*Marchand* (merchant)	251
0.896	*Chaudronnier* (coppersmith/boilermaker)	29
0.897	*Tanneur* (tanner)	39
0.898	*Tonnelier* (cooper)	158
0.907	*Bourrelier* (saddler)	43
0.912	*Ajusteur* (metalworker)	34
0.915	*Fabricant* (manufacturer)	118
0.917	*Tourneur* (turner)	60
0.917	*Menuisier* (joiner)	374
0.922	*Boulanger* (baker)	230
0.923	*Boucher* (butcher)	91
0.924	*Cocher* (coachman)	105
0.928	*Serrurier* (locksmith)	125
0.929	*Chapelier* (hatter)	42
0.931	*Chauffeur* (driver/chauffeur/stoker)	29
0.933	*Fondeur* (caster)	15
0.935	*Maître* (master)	77
0.937	*Potier* (potter)	16
0.941	*Cloutier* (nail maker)	17
0.944	*Imprimeur* (printer)	18
0.944	*Plafonnier* (ceiling maker)	18
0.944	*Vannier* (basket worker)	18
0.946	*Ferblantier* (tinsmith)	37
0.950	*Perruquier* (wig maker)	40
0.956	*Commerçant* (shopkeeper)	23
0.957	*Musicien* (musician)	23
0.958	*Mégissier* (leather worker)	24

0.960	*Aubergiste* (innkeeper)	25
0.962	*Gardien* (guard)	78
0.972	*Teinturier* (dry cleaner)	36
0.976	*Peintre* (house painter)	82
0.976	*Charcutier* (pork butcher)	42
0.978	*Ébéniste* (cabinet maker)	45
0.984	*Sous-officier* (noncommissioned officer)	62
0.985	*Négociant* (merchant)	136
0.986	*Gendarme* (policeman)	73
0.986	*Mécanicien* (mechanic)	74
0.992	*Commis* (store assistant)	123
0.998	*Employé* (employee)	559
1.000	*Bijoutier* (jeweler)	21
1.000	*Chef d'équipe* (foreman)	33
1.000	*Clerc* (clerk)	25
1.000	*Coiffeur* (hairdresser)	35
1.000	*Comptable* (accountant)	53
1.000	*Cuisinier* (cook)	25
1.000	*Docteur* (doctor/physician)	26
1.000	*Douanier* (customs officer)	62
1.000	*Entrepreneur* (contractor)	25
1.000	*Épicier* (grocer)	23
1.000	*Facteur* (postman)	56
1.000	*Graveur* (engraver)	15
1.000	*Horloger* (watchmaker)	33
1.000	*Huissier* (usher)	19
1.000	*Instituteur* (teacher)	129
1.000	*Médecin* (physician)	17
1.000	*Mouleur* (caster)	20
1.000	*Notaire* (lawyer)	25
1.000	*Officier* (officer)	64
1.000	*Pharmacien* (pharmacist)	26
1.000	*Professeur* (professor/teacher)	25
1.000	*Rentier* (person of private means)	25
1.000	*Représentant* (representative)	35
1.000	*Sellier* (saddler)	23
1.000	*Tapissier* (tapestry maker/interior decorator)	19
	Female	
0.025	*Bergère* (shepherdess)	80
0.042	*Filandière* (spinner)	24
0.073	*Laboureuse* (plow woman)	82
0.088	*Métayère* (tenant farmer)	34
0.105	*Brassière* (sleeved-vest maker)	38
0.137	*Salariée* (wage earner)	51
0.171	*Travailleuse* (laborer)	35
0.220	*Gagiste* (pawnbroker)	136
0.280	*Fileuse* (spinner)	681
0.294	*Rubannière* (binding seamstress)	17
0.357	*Meunière* (miller)	28
0.373	*Servante* (servant)	485
0.376	*Journalière* (day worker)	1,204
0.419	*Domestique* (domestic)	2,113
0.450	*Tricoteuse* (knitter)	20
0.478	*Aide* (assistant)	115
0.492	*Cultivatrice* (farmer)	5,644
0.500	*Bobineuse* (winder)	18
0.500	*Papetière* (stationer)	20
0.508	*Dévideuse* (unwinder)	61
0.515	*Manouvrière* (day worker)	165
0.516	*Dentelière* (lacemaker)	91
0.529	*Jardinière* (gardener)	87
0.536	*Fille* (maid)	28
0.552	*Ménagère* (houseworker)	2,173
0.556	*Femme de ménage* (houseworker)	27
0.576	*Tisserande* (weaver)	486
0.588	*Fabricante* (manufacturer)	34
0.613	*Aubergiste* (innkeeper)	31
0.637	*Vigneronne* (wine grower)	190
0.648	*Propriétaire* (owner)	423
0.670	*Ouvrière* (worker)	646
0.689	*Brodeuse* (embroideress)	106
0.707	*Tailleuse* (tailor)	376
0.733	*Lisseuse* (smoother)	15
0.737	*Fermière* (farmer)	19
0.750	*Gantière* (glover)	44
0.750	*Marchande* (merchant)	148
0.750	*Passementière* (braid and trimming saleswoman)	36
0.762	*Débitante* (grocer/tabacconist)	21
0.767	*Sans profession* (without occupation)	4,205
0.778	*Piqueuse* (machinist)	27
0.779	*Blanchisseuse* (laundress)	249
0.779	*Couturière* (dressmaker)	2,128
0.782	*Cuisinière* (cook)	522
0.787	*Lingère* (linen maid)	558
0.789	*Ourdisseuse* (weaver)	19
0.800	*Cabaretière* (innkeeper)	20
0.836	*Repasseuse* (ironer)	201
0.879	*Épicière* (grocer)	33
0.882	*Polisseuse* (polisher)	17
0.889	*Boulangère* (baker)	18
0.905	*Demoiselle* (lady)	21
0.928	*Femme de chambre* (chambermaid)	181
0.935	*Giletière* (waistcoat maker)	31
0.949	*Rentière* (person of private means)	99
0.971	*Employée* (employee)	103
0.974	*Modiste* (milliner)	117
0.977	*Fleuriste* (florist)	43
1.000	*Institutrice* (schoolteacher)	74
1.000	*Mécanicienne* (mechanic)	27
1.000	*Sage-femme* (midwife)	24

NOTES

1. We are grateful to Jacques Dupâquier and Denis Kessler for offering us access to their data set.

2. Conditional probability is indicated by a "I."

3. The odds of making the same score as one's father compared with making a higher score in a given type *R* is defined as $\pi_=(R)/\pi_+(R)$, and the odds ratio for type *R* versus type *R'* is $(\pi_=(R)/\pi_+(R))/(\pi_=(R')/\pi_+(R'))$.

4. The number 4.5 is equal to $\exp(\eta_{R=1} - \eta_{R=5} + \eta'_{R=5} - \eta'_{R=1})$. All the odds ratios mentioned here are significantly different from 1.

REFERENCES

Agresti, A. 1990. *Categorical data analysis.* New York: Wiley.

Aubin, J.-P., and H. Frankowska. 1990. *Set-valued analysis.* Boston, Mass.: Systems and Control—Foundations and Applications.

Blau, P. M., and O. D. Duncan. 1967. *The American occupational structure.* New York: Wiley.

Bonneuil, N. 1997. *Transformation of the French demographic landscape, 1806–1906.* Oxford: Oxford University Press.

Bourdieu, P. 1979. *La distinction: Critique sociale du jugement de goût.* Paris: Minuit.

Braudel, F., and E. Labrousse. 1970. *Histoire économique et sociale de la France.* Paris: PUF.

Chartier, R. 1992. La ligne Saint-Malo-Genève. In *Les lieux de mémoire,* vol. 3, table 1, edited by P. Nora, 738–75. Paris: Gallimard.

Cuin, C.-H. 1993. *Les sociologues et la mobilité sociale.* Paris: PUF.

Daumard, A. 1963. Une référence pour l'étude des sociétés urbaines en France aux XVIII^{e} et XIX^{e} siècles. Projet de code socio-professionnel. *Revue d'Histoire Moderne et Contemporaine* 3:185–210.

———, ed. 1973. *Les fortunes françaises au XIX^{e} siècle.* Paris: Mouton.

de la Gorce, G. 1991. L'individu et la sociologie: Soixante ans d'etude de la mobilité sociale. *Revue de Synthèse* 2: 237–64.

———. 1993. Mobilité sociale et trajectoires individuelles: L'histoire d'une spécialité de la sociologie et l'étude du cas d'une génération de Parisiens. Ph.D. diss., V. Karady dir. Paris: EHESS.

Demaris, A. 1992. *Logit modelling.* London: Sage.

Desrosières, A., and L. Thévenot. 1988. Les catégories socio-professionnelles. Paris: Découverte.

Duncan, O. D. 1961. A socioeconomic index for all occupations. In *Occupations and social status,* edited by A. J. Reiss, P. K. Hatt, and O. D. Duncan, 109–38. New York: Free Press.

Dupâquier, J., and D. Kessler, eds. 1992. *La société française au XIX^e siècle.* Paris: Fayard.

Erikson, R., and J. H. Goldthorpe. 1993. *The constant flux.* Oxford: Clarendon Press.

Fox, E.W. 1971. *History in geographical perspective: The other France.* New York: W. W. Norton.

Gavignaud-Fontaine, G. 1996. *La Révolution rurale dans la France contemporaine, XVIII^e–XIX^e siècle.* Paris: L'Harmattan.

Goldthorpe, J. H. (with C. Llewelyn and C. Payne). 1987 [1980]. *Social mobility and class structure in modern Britain.* Oxford: Clarendon Press.

Goodman, L. A. 1965. On the statistical analysis of mobility tables. *American Journal of Sociology* 70: 564–85.

Goreux, L. M. 1956. Les migrations agricoles en France. *Études et Conjoncture* 10: 327–76.

Gribaudi, M., and A. Blum. 1990. Les individus dans l'espace social. *Annales* ESC 6: 1365–1402.

Gullickson, G. 1986. *Spinners and weavers of Auffay.* Cambridge: Cambridge University Press.

Hauser, R. M., J. M. Koffel, H. P. Travis, and P. J. Dickinson. 1975. Temporal change in occupational mobility among men in the United States. *American Sociological Review* 40: 279–97.

Heffernan, M. J. 1989. Literacy and geographical mobility in nineteenth century provincial France: Some evidence from the department of Ille-et-Vilaine. *Local Population Studies* 42: 32–42.

Hope, K. 1972. Quantifying constraints on social mobility: The latent hierarchies of a contingency table. In *The analysis of social mobility: Methods and approaches,* edited by K. Hope, 121–90. Oxford: Clarendon.

Hout, M. 1984. Status, autonomy and training in occupational mobility. *American Journal of Sociology* 89: 1379–1409.

Le Bras, H. 1986. *Les trois France.* Paris: Odile Jacob.

Lepetit, B. 1986. Les dénivellations de l'espace économique en France. *Annales* ESC 6: 1243–72.

Le Roy Ladurie, E. 1973. *Le territoire de l'historien.* Paris: Gallimard.

Lesthaeghe, R. 1992. Motivation et légitimation: Conditions de vie et régimes de fécondité en Belgique et en France du XVI^e au XIX^e siècle. *Modèles de la Démographie Historique.* Congrès et Colloques 11, 275–318. Paris: PUF, INED.

Levi, G. 1988. *Inheriting power: The story of an exorcist.* Chicago: University of Chicago Press.

Lipset, S. M., and R. Bendix. 1960 [1959]. *Social mobility in industrial society.* Berkeley: University of California Press.

Luc, J.-N. 1986. L'illusion statistique? *Annales* ESC 4: 887–911.

Moch, L.P., and L. Tilly. 1985. Joining the urban world: Occupation, family, and migration in three French cities. *Comparative Studies in Society and History* 27: 33–56.

Motte, C., and J.-P. Pélissier. 1992. La binette, l'aiguille et le plumeau: Les mondes du travail féminin. In *La société française au XIX^e siècle,* edited by J. Dupâquier and D.Kessler, 237–342. Paris: Fayard.

Nadaud, M. 1976. *Léonard, maçon de la Creuse.* Paris: Maspero.

Perdiguier, A. 1977. *Mémoires d'un compagnon.* Paris: Maspero.

Rosental, P.-A. 1999. *Les sentiers invisibles: Espace, familles et migrations en France au xix^e siècle.* Paris: EHESS.

Savage, M. 1988. The missing link? The relationship between spatial mobility and social mobility. *British Journal of Sociology* 39: 554–77.

Sewell, W. H. Jr. 1985. *Structure and mobility: The men and women of Marseille, 1820–1870.* Cambridge: Cambridge University Press.

Sorokin, P. A. 1927. *Social mobility.* New York: Harper and Brothers.

———. 1959. *Social and cultural mobility.* Glencoe, Ill.: Free Press.

Spaeth, J. L. 1979. Vertical differentiation of occupations. *American Sociological Review* 44: 746–62.

Thélot, C. 1982. *Tel père, tel fils?* Paris: Dunod.

Tilly, L. 1979. Occupational structure, women's work and demographic change in two French industrial cities, Anzin and Roubaix, 1872–1906. In *Time, space and man: Essays in microdemography,* edited by J. Sundin and E. Soderlund, 107–32. Atlantic Highlands, N.J.: Humanities Press.

Weber, E. 1976. *Peasants into Frenchmen.* Stanford, Ca.: Stanford University Press.