

Vocational Education, Training Specialization and Social Reproduction

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Yvette Grelet
Céreq, Lasmus-CNRS (France)
yvette.grelet@unicaen.fr

Abstract

The role of education as a channel for social reproduction and mobility has for long been a key issue in social science research. Social background, gender and ethnicity are acknowledged as the main factors explaining educational attainment level (vertical differentiation). The factors influencing the horizontal differentiation of educational curricula (field of study) are of more recent concern. In this study, we focus on the channelling process of French pupils into different tracks of secondary education, up to the choice of a vocational specialization. In France, 40% of leavers come from a vocational track, either school-based (in full-time vocational high schools) or through apprenticeship. Considering the weight of vocational tracks in initial education, it is then worth looking into the orientation process towards these tracks, and, more precisely, towards a specific sector of educational specialization, which evidently impacts the future occupational destination: These mechanisms are in the heart of social reproduction and social mobility. Using the French Secondary Education Pupil Panel 1995, we show that schooling performance is not the only criterion used to spot each students' vocational track: Social stratification also plays a role in this process, reinforced by spatial stratification. Even if the selections makes the population of pupils channelled into the vocational track more homogeneous, social background and the local opportunity structure has still an effect, within this population, on their vocational orientations.

Introduction

Quite a few authors have emphasized the influence of social origin on educational attainment in France (Bourdieu and Passeron, 1970; Goux and Maurin, 1998; Boudon et al., 2000; Duru-Bellat, 2003) as well as in foreign countries (Shavit and Müller, 1998). Social mobility research has proved educational level to be an important vector of intergenerational inheritance (Breen, 1988; Thélot, 1982). Concerning orientation towards vocational tracks, several factors underlie the influence of social origin. We will focus on three of them: educational achievement, families' aspirations and local environment.

Educational achievement is a signal of future ability to succeed or not in academic subjects. It is a criterion used to screen pupils who will not go on in the general stream, but it also determines their orientation towards a specific field of training. As there is a hierarchy of specializations, some are very selective, and quite often applicants are not oriented according to their preferences.

Families' expectations are strong incentives which shape young peoples' pathways. Parents who set higher goals for their children will be more likely to support their plans and aspirations, taking advantage of every opportunity supplied by the educational system. Privileged families are more able to elaborate effective strategies in order to prevent their child from being geared towards vocational tracks (less prestigious) and help them stick as long as possible to general educational tracks (Boudon et al., 2000; Caille and Lemaire, 2002). A different type of aspirations may be observed among some socio-occupational categories like farmers or craftsmen, whose occupational identity is very strong and provide inheritance models (Thélot, 1982).

Training curricula unfold in a specific environment, which "shapes individual's choice and actions" (Allmendinger, 1989). It is worth taking into account 'societal effects' observable at the local level. Firstly, the range and amount of training supply are very heterogeneous, even in a much centralised country like France, horizontally as well as vertically. In cities, almost all the range of opportunities offered by the educational system is available. By contrast, training supply is much narrower in rural areas, where there may be no general secondary school in the vicinity, or even no facility for continuing on, up to the vocational *baccalaureat*. Secondly, the local educative system reacts to families' educational demands, which may not be the same depending on their own socio-occupational background. Caro and Hillau (1997) showed that the local adjustment of vocational training to qualification needs to operate through a 'filter of social reproduction' -see also (Grelet, Timoteo, 1998). With regard to the

construction of completion routes, there is a strong interrelation between social segregation and spatial segregation (Grelet, 2004).

Couppié et al. (1997) underline the persistence of a gender-based segmentation of French training streams. Ianelli and Smyth (2004) analysed the extent to which gender and social segregation apply to options concerning areas of study. We aim at going a little bit further in this direction, using a sharper categorisation of fields of vocational study –which the perspective of international comparison does not allow for. To our knowledge, the issue of the relation between social background and precise vocational curricula, including the choice of the training specialization, has not so often been addressed by the means of quantitative data (in the French case see for example Affichard et al, 1994). Yet, the educational background of vocational trainees is assessed, on the labour market, not only in terms of educational attainment and diploma, but also through the occupational specialization, and this is especially true in the manufacturing sector (Couppié, Epiphane, 2001).

Social segregation generates two different groups of students: those who come through secondary schooling in the general track, where they can expect to reach the highest levels, and those who choose (or are oriented towards) the vocational track, which grants them faster entry into the labour market¹. Is this process still at work among these pupils who do not want, or (more frequently) do not succeed in continuing? They have been screened during the decisive years of primary and lower secondary education. Does their allocation in the diverse vocational fields of study still mirror the ‘remaining’ hierarchy² of their social background? The choice of a specialization may determine their future occupation or field of occupations for the whole working life. It is therefore a crucial issue to ask if and how this choice is induced by the occupational status of their parents.

Using the French Secondary Education Pupils’ Panel 1995, we will show that schooling performances are not the only sorting criterion for the allocation of students into and within the vocational track, and that social stratification plays a role in this process, reinforced by spatial stratification.

This paper is structured as follows. The first section describes the possible pathways in French secondary schooling system. The second is devoted to a presentation of the data used

¹ The process is not that much dichotomic. There is actually a gradation of schooling pathways, and, as we will see, a lot of heterogeneity within each track.

² 38 percent of all secondary level students are children of manual workers; this proportion rises up to 54 percent in the vocational track.

in this study, and to a definition of the variables. In the third section we examine the different options making up the orientation of pupils towards vocational upper secondary education; we show that, for equivalent schooling performances, parental social status plays an important role in this tracking process, but that other factors also operate. In the last section we attempt to provide a more refined analysis of social reproduction process through vocational specialization.

1. Two main streams within the French secondary schooling system³

Figure 1⁴ shows the flow of pupils within upper secondary education. Pupils have followed the same programme during the first cycle, at the end of which they may optionally sit for the final exam, *le Brevet des colleges*. At this stage, only one percent of dropouts already leaves school, and for all other pupils occurs a decisive split between schooling destinies. The fourth form is actually the first selection crossroad in the educational career (even if not completely irreversible) when students may continue on in the general / technological track (58%), or enter a vocational track (41%).

Vocational education is either school-based, in a vocational secondary school (*Lycée Professionnel*) for two out of three trainees at this stage (Kirsch, 1994), or on the production site and in apprentice training centres (*Centre de Formation pour Apprentis*). During the first two years of upper education, students prepare for the CAP (*Certificat d'aptitude professionnelle*: Certificate of vocational competence) or the BEP (*Brevet d'études professionnelles*: Vocational studies diploma). The difference between CAP and BEP is that CAP is an exit level certificate, which does not allow continuing on towards the vocational baccalaureat, as BEP does. Among students enrolled in the vocational stream, 85% of them reach the final year of CAP or BEP. Among them, one out of two enter then the labour market, whether they passed or failed their final examination; more than one third continue on towards the vocational *baccalauréat*, the second level of vocational certification; some others manage to re-enter the technological track (there are movements between both tracks). To summarize the whole in- and out-flows of secondary education, out of 100 pupils who enrolled in secondary education, not fewer than 44 have gone through vocational secondary school or apprenticeship. The role played by vocational education in the training of French

³ In France, apprenticeship is considered as one of the streams of the educative system.

⁴ Figures and tables are gathered together in the appendix.

young people is thus considerable, although often underestimated. It is then worth to address the issue of the construction process and content determination of vocational curricula.

2. Data and definitions

• The panel of pupils who enrolled in secondary education during the school year 1995-1996.

The Ministry of Education conducts regularly pupils' panels which track them throughout the educative system, from the beginning of secondary cycle on, in private and public schools, including agricultural and apprentice training centres. One out of forty youngsters who enrolled in the first form of the lower secondary education in 1995 has been followed up as long as he/she was staying in the French educational system. These 18000 pupils entered the panel on average at the age of 11. They are now either in tertiary education, or in the labour market.

Data collected at different periods of time give information on:

- Schooling curriculum year after year, including the type of school and its environment;
- Examination results and marks (the bulk of the panel sat for the first cycle final matriculation, *le Brevet des Collèges*);
- Family background (occupation, level of education, place of birth of father and mother; number of siblings; lifestyles and habits);
- Parents' aspirations and implication in their child's education (as reported in 1998, when pupils were still enrolled in lower-secondary school);
- Orientation process towards general or vocational track (at the end of lower-secondary cycle);
- Participants' response to a questionnaire sent in Spring 2002, about their situation, retrospective assessment of their curriculum, self-esteem, educational and occupational plans.

We selected the 13120 panel participants who responded this questionnaire. We mainly concentrate on those who followed a vocational track.

We use the marks obtained for the *Brevet des Collèges* to assess the schooling level achieved in lower secondary education. Fathers' occupational position⁵ is used for identification of social background (it is highly correlated with mother's position and with both father's and

⁵ Classified according to the French socio-occupational categories.

mother's level of education). Parent's aspirations are assessed through their response to a question about the "diploma giving the easiest access to employment" (possible items: vocational basic certification –CAP or BEP / vocational *baccalaureat* / general or technological *baccalaureat* / tertiary qualification). We use student's indications about the determinants of their orientation, their feelings towards their father's (mother's) occupation, and their own occupational plans. Lastly, the environmental context is indicated by the type of area the school belongs to (number of inhabitants of the district).

• **Registered data on the attractiveness of vocational specializations**

Knowing that the allocation of students in the different vocational specializations depends on the training supply, and that pupils' wishes cannot always be fulfilled, it seems relevant to ask which specializations are the most attractive and which repulsive. We use therefore an indicator of attractiveness computed by the Ministry of Education. For every specialization, the Ministry collects each year, at the national level, the number of applications submitted by male and female students, as well as the number of available places. The *indicator of attractiveness* is the ratio *number of applicants (male and female) / number of places*. These data are available for the courses taken in public or private secondary schools, but neither for apprenticeship nor for agricultural training.

3. Orientations and curriculum choices: segregation, inheritance or merit?

At the end of the first cycle of secondary education, pupils "have the choice" to continue on in the general stream, or follow the vocational stream and prepare for a CAP or a BEP. They can do it either by taking an apprenticeship or by enrolling in full-time vocational high school. Lastly, they have to apply for a specific occupational specialization. Thus, three steering decisions are made in one step. These three choices are the most constrained, firstly by pupil's estimated academic ability; secondly by the training supply available in the vicinity. So that pupils and family's wishes are not always fulfilled.

Allocation of students in these tracks depends on their results (marks), but also on their social background, environment and training supply, and families' expectations, cultural model and strategies. Girls are less prone to enter the vocational track: they reach higher educational attainment than men (Oeuvarard, Rosenwald, 2003). These features lead us to build three models to analyse the links between each of the three 'choices' with a small set of variables:

- Gender;

- Achievement in the lower secondary education measured by the average mark received for the *Brevet des colleges*;
- Social status (derived from the socio-occupational category of pupil's father);
- Parents' educational aspirations, assessed after the highest diploma they think useful on the labour market;
- Environment (size of the spatial area, in number of inhabitants).

3.1. General vs vocational: achievement is decisive, so are parents' ambitions

Model 1 shows that bad schooling results are a very strong handicap to continue on in the general track (Table 1). Whatever their social origin, environment, gender and parents' aspirations, pupils having less than 10 (the pass-mark) at the *brevet des collèges* have 5 times more chance to leave the general track than their counterparts who reach the pass level. Age at the end of lower-secondary education is another measure of achievement, which plays a strong role in the orientation process: younger pupils are more often allowed to continue on in the general or technological stream.

A factor which reveals to have as much influence as educational achievement is the cultural norm as regards education, estimated after parents' assessment of which diploma has the best value on the labour-market: children whose parents have low standards are much more likely to enrol in a vocational program.

The effect of social origin is not only exerted through educational achievement (Duru-Bellat, 2003), and aspirations, but also through differentiated strategies and abilities to make pupils pass despite schooling shortcomings. Caille and Lemaire (2002) have shown indeed from a previous pupils' panel dataset that, children's achievement level being equal, high status parents are more ambitious and ask for an orientation towards the general track, much more often than manual workers do. These discrepancies are not compensated by school boards' decisions. Achievement and aspirations do not entirely capture the effect of social background: occupational status of father is still significant. All things being equal, the lower the status of the father, the higher the probability to exit the general track. Effect of spatial environment is significant too: so, this effect is not only the product of differences in the social composition of the study areas, but also of differences in the range of education and training supply. In rural areas and small towns, where the supply is much narrower than in urban districts, students are more prone to leave academic education. This confirms the results found by (Davaillon, 1995) about the lower educational aspirations and opportunities in rural districts. Knowing the interplay between spatial and social stratification on education (Grelet,

2004), we may even assume that the spatial effect has partly been absorbed by the social background direct and indirect effects⁶.

The role of gender is significant: this tends to prove that, if female students are much less likely to enter vocational tracks⁷, it is not only due to their better level of achievement. Maybe female students as well as their parents and teachers anticipate the poor returns on the labour market of “female” vocational specialization.

3.2. Apprenticeship or vocational high-school?

Apprenticeship is more labour-market oriented than school-based vocational training. Four out of five apprentices prepare for a CAP (terminal diploma), as this is the case for one out of six vocational high-school students. By tradition, and because it leads to ‘male’ occupations (such as construction, auto repair, foodstuff etc.), apprenticeship is predominantly male, as shown in Model 2 (Table 1). Two factors appear to influence equally the probability to take an apprenticeship rather than school-based vocational training: the local environment, and parents’ aspirations.

Apprenticeship is more frequent in rural areas or small towns. The local context may indeed be of a great influence, as established in (Grelet, 2004): the reason is that apprenticeship is widespread in small firms belonging to precise activities (Kirsch, 1994) which characterise the productive structure of certain parts of the French territory, like South of France; on the other hand, it is a lively tradition in some regions like *Alsace* or *Pays de Loire*, whilst in the North, vocational training is traditionally scholastic.

As regards aspirations, the model shows all the same that apprenticeship is more frequent among pupils whose parents favour basic vocational diplomas (CAP or BEP).

Educational achievement and age at the end of lower-secondary cycle, which weighted heavily on the choice of vocational track, are still important factors: low grades and high age increase the probability to take an apprenticeship.

Social status has no significant direct effect on the probability to take an apprenticeship: this may be only because the classification of parents’ occupation used in the panel is not accurate enough, either to differentiate among a more homogeneous population, or to make appear the predilection of self-employed parents for this way of training (Affichard et al, 1994; Grelet, 2004).

⁶ In the first type of district (rural and very small towns), the most useful diploma is CAP or BEP for 13 percent of respondents, and a tertiary certification for only 23 percent; these proportions in big cities are respectively of 6 percent and 36 percent.

⁷ Among youngsters enrolled in a CAP or BEP programme, 55 percent are male.

3.3. Choice of a specialization: inclination or resignation?

Both programmes cover a wide range of manufacturing or tertiary specializations. Young peoples' reluctance for manual labour and jobs suffering from a lack of recognition establishes a clear hierarchy of attractiveness (and, therefore, selectivity) within fields of training, as shown in Table 2. One may wonder if this hierarchy mirrors the social ladder, or if the level achieved is the only selection criteria which opens access to an attractive specialization (a specialization which has more candidates than places). As available information regarding attractiveness do not cover the entire field of secondary level vocational education and training, following results do neither apply to apprenticeship course, nor to agricultural specializations. However, logistic regressions carried out separately on male and female vocational high school students, to estimate the probability of choosing an attractive specialization, provide some interesting results.

Model 3a and 3b show that less successful pupils are much less likely to be oriented towards an attractive field of study: the more attractive, the more selective are these specializations. But this pattern seems quite gender differentiated. Grades are the only significant factor for female⁸. By contrast, social and spatial origin contribute also to facilitate or hinder access of males to an attractive specialization.

Multinomial logistic regressions lead us a step further in the analysis of the choice of a specific occupation: they show an effect of spatial or social origin specific to some occupations⁹: everything being equal, children of manual workers are more likely to "chose" metalworking, whereas children of professionals train more often for the sales sector. In small towns, male chose more often to train for mechanics, and female for manufacturing industries.

Table 6, drawn on youths' answers to questions regarding the past orientation process and their future plans, provides us with additional elements for the understanding of vocational orientations. It is striking to see that young people who acknowledge having been oriented in the vocational track against their wish are, in a great majority, preparing for tertiary occupations (for female: secretary, accounting, health and social care; for male: accounting, sale, electronics). They say they have been rejected because of a level of attainment under the required threshold – otherwise they would have continued on in the general track. Those who

⁸ Female are concentrated in a few tertiary specializations and half of them only in attractive ones. Indeed, after tertiary programmes, less occupationally oriented than manufacturing training programmes, young women are in competition with their more qualified counterparts, so that return to education is rather low at this level.

⁹ Results of models may be asked to author.

say having been oriented reluctantly towards a specialization they didn't ask for are now training for dressmaking (girls) or metal-working (boys). By contrast, youngsters who agree with their orientation train more often for traditional craft: foodstuff or hairdressing (girls), agriculture, woodwork, hotel and catering trade, auto-repair (boys).

4. Pupils' vocational orientations are in congruence with their social origin

The following multiple correspondence analysis summarizes the preceding results. Educational pathways appear to be the product of an individual history which interacts with the context in which it unfolds. The analysis is carried out on the links between vocational specialization and father's occupational status of 4076 pupils enrolled in upper vocational education. Relationships between social origin and youths' plans for the future appear as illustrative variables, as well as parents' aspirations, youths' educational achievement, information on the orientation process, and spatial characteristics. The results are reported on Figure 2.

The first factor (horizontal axis) reveals the strong specificity of the agricultural sector and the traditional transmission of trade characteristic of this milieu: on the right hand side of the factorial map, rural areas, where live farmers' sons who train for this occupation, have the project to take over family's business. Children of other self-employed, artisans or shopkeepers, partly share the same pattern: the choice of vocational education is voluntary, and not an outcome of low achievement, it is made in accordance to parents' aspirations who value vocational diploma. If ever pupils have encountered difficulties in their orientation process, it is by lack of available training supply in the vicinity. Apprentices share this pattern more often than high-school students.

By contrast, the left-hand side of the map reveals an opposite pattern, more frequent amongst low-achievers, children of salaried fathers (managers, clerks or manual workers) living in big cities. Here, orientation towards vocational track occurred by default of being allowed to stay in the general or technical track.

The second factor mirrors the social hierarchy: from the top to the bottom of the vertical axis one finds: employers and professionals; intermediate-grade occupations and shopkeepers; clerks; skilled manual workers and artisans; unskilled manual workers and farm labourers. In accordance, this factor ranks parents' aspirations and children vocational orientations: the level of the assessed "most useful diploma" decreases with father's social status; so do the feelings towards father's occupation (from attraction to reluctance). Vocational

specializations are more or less ranked in accordance with their degree of attractiveness. For male:

- Sale, hotel and catering trade, electricity-electronics, woodwork;
- Accounting and mechanics;
- Metal working, construction, other manufacturing industry.

For female:

- Hairdressing;
- Health and social care;
- Secretary, accounting, sale, hotel and catering trade and manufacturing industry.

Conclusion

Orientation towards a vocational track results from a complex process, where several factors interplay. Educational attainment, as a predictor of future ability to succeed in academic subjects, has a decisive influence, but does not completely account for social discrimination. Families' aspirations may reinforce or weaken the effect of social origin. Spatial environment also shapes the training curricula, according to the range of available training supply: there is a strong interrelation between social segregation and spatial segregation.

As regards the choice of a specific occupational field, the analysis of the associations between youngsters' background and destination shows that social reproduction is at work in definite socio-economic spaces. It may be either that young people comply with models provided by their family environment (parents have themselves a vocational background, children will inherit the family company, etc.); or because some parents are not aware of the best strategies allowing their children to avoid the tracks leading to blue collar careers. In this last case, orientations 'by default' towards the less recognised qualifications may induce attempts to escape a few enviable occupational destiny and therefore, frequent job and occupation changes, despite a highly occupation-specific initial training. One would then observe a loose fit between education and employment as a consequence of a reluctant choice of specialization: the future knowledge of the occupational careers of the panel 95' youngsters should allow us to answer this question.

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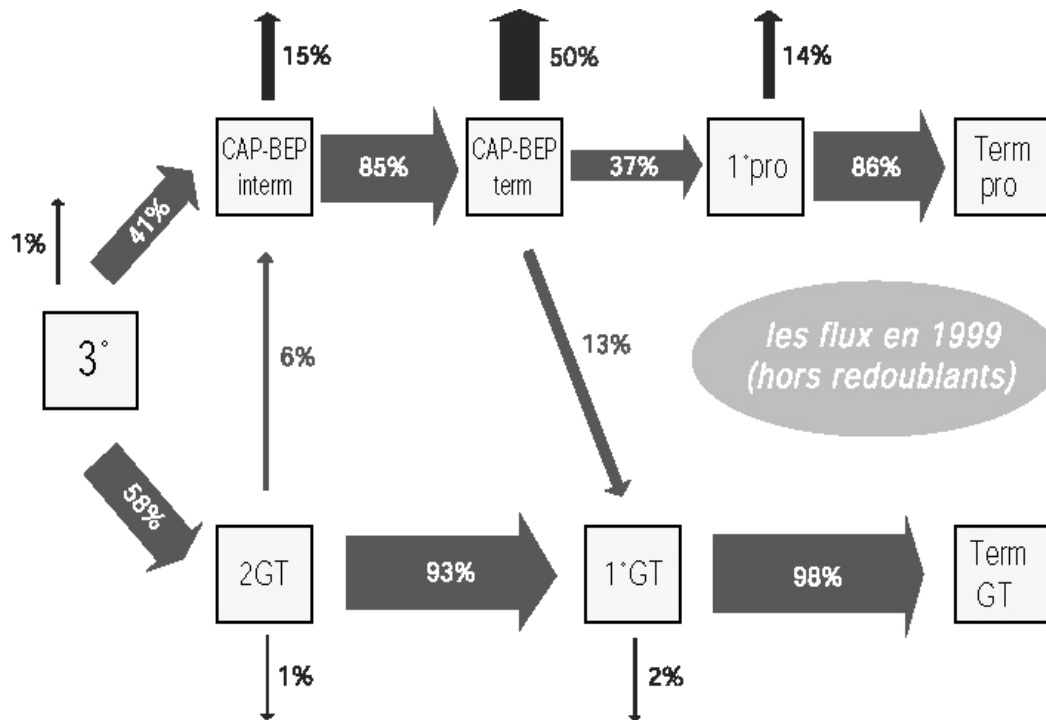
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Appendix: Figures and tables

Figure 1: pathways through French secondary education in 1999-2000



Comment: This figure, extracted from (HCEEE, 2002), shows the pupils' flow in public and private secondary schools under supervision of Ministries of Education and Agriculture, or in apprenticeship centres. Pupils are oriented at the end of the first cycle of secondary education (*Classe de 3ème*), either towards the vocational stream (school-based or apprenticeship, 41%) or towards the general or technological stream (58%). If they choose the vocational track, they prepare for the CAP (*Certificat d'aptitude professionnelle*: Certificate of vocational competence) or the BEP (*Brevet d'études professionnelles*: Vocational studies diploma), ordinarily in two years (intermediate and final form). BEP holders may prepare for the Vocational *Baccalauréat* in two years (*Première professionnelle* and *Terminale professionnelle*). The academic stream leads in three years (*Seconde, Première, Terminale*) to the *Baccalauréat général ou technologique*. *Baccalauréat* is the matriculation diploma.

Table 1: Orientation at the end of lower secondary school

	Model 1 : probability to be oriented towards vocational track (N=10580)		Model 2 : when oriented towards vocational track, probability to take an apprenticeship (N=3261)	
	Deviation to estimated probability for the reference	Odds ratio	Deviation to estimated probability for the reference	Odds ratio
<i>Estimated probability for the reference</i>	.55		.17	
Gender: female (<i>ref. Male</i>)	-.06***	.77	-.09***	.43
Type of district (<i>ref. >=200 000 inhab.</i>)				
Rural, urban under 5 000 inhabitants	+.11***	1.56	ns	
Urban 5000-<20 000 inh.	+.05**	1.24	ns	
Urban 20 000-<200 000 inh.	-.10***	.68	-.07***	.52
Mark at <i>Brevet (ref.10-11)</i>				
0-9	+.30***	4.70	+.05**	1.34
12-13	-.24***	.36	ns	
14 and higher	-.41***	.13	ns	
Age at <i>Brevet (ref. 15)</i>				
Younger than 15	-.33***	.23	ns	
Older than 15	+.22***	2.7	-.04*	.72
Father's status (<i>ref. clerical worker</i>)				
Farmer	+.12**	1.6	ns	
Artisans, shopkeepers and employers	ns		ns	
Manager, higher-grade professional, administrator, official	-.23***	.38	ns	
Intermediate-grade	ns		ns	
Skilled manual workers	+.09***	1.44	ns	
Unskilled manual workers	+.15***	1.90	ns	
Without activity, unknown	+.08*	1.38	-ns	
Father's level of education (<i>ref. lower than Baccalauréat</i>)				
At least <i>Baccalauréat</i>	-.12***	.61	ns	
"Useful" diploma (<i>ref. 3d. level</i>)				
No opinion	+.04*	1.20	ns	
CAP / BEP	+.31***	5.08	+.12***	1.99
Vocational <i>Baccalauréat</i>	+.17***	2.09	ns	
General / technological <i>Bacc.</i>	-.15***	.54	-.06*	.62

Source: Ministry of Education, panel of 95' entrants in secondary education.

***=p<.0001; **=p<.01; *=p<.05; ns: not significant.

Comment: Every other variables entered in the model being equal, having passed the *Brevet* increases by 30% the probability to be oriented towards a vocational track; among those oriented towards a vocational track, it increases by 5% the probability to take an apprenticeship rather than full-time vocational schooling.

Table 2: Attractiveness of vocational specialization (vocational secondary schools)

Specialization	CAP			BEP		
	Number of available places	Number of female candidates / number of places	Number of male candidates / number of places	Number of available places	Number of female candidates / number of places	Number of male candidates / number of places
Accounting	-	-	-	23206	0.41	0.37
Auto repair	598	0.04	2.12	7730	0.04	1.68
Communication	346	1.58	2.46	-	-	--
Constr: fabrication	1180	0.03	1.13	1812	0.01	1.15
Constr.: finishing	1870	0.04	1.21	2713	0.08	0.65
Dressmaking	1915	0.78	0.05	5815	0.88	0.08
Electricity, -tronics	1611	0.03	1.14	25662	0.03	1.17
Energy	120	0.02	1.12	3912	0.01	1.24
Engineering works	682	0.11	0.92	11799	0.03	0.72
Foodstuff	3099	0.76	0.71	783	0.38	1.43
Hairdressing	2270	4.09	0.10	-	-	-
Health and social	-	-	-	12184	2.31	0.11
Hotel-catering	2594	0.91	0.25	9389	0.55	0.81
Metal work	2694	0.01	1.26	6366	0.01	0.98
Plant maintenance	36	0.17	1.53	9940	0.02	0.86
Sale	2687	1.30	0.49	19441	1.14	0.71
Secretary	-	-	-	23864	0.81	0.05
Transport	202	0.21	1.06	3271	0.20	1.14
Wood and furniture	2579	0.11	1.16	5231	0.04	1.09

Source: Ministry of Education, school year 2002-2003.

Comment: For each specialization, French vocational secondary schools supply a definite number of places in the first form of a CAP or BEP cycle. Specializations are not *a priori* gendered, so that places are available for male as well as for female. The attractiveness of a specialization is the ratio: number of candidates (male+female)/ number of places. For “Accounting”, a specialization trained in a BEP cycle, the indicator of attractiveness is equal to $0.41+0.37=0.78$. There are fewer applicants than places: this specialization is not attractive. Besides, it is one of the rare ‘un-gendered’ specializations (there are nearly as many male applicants than female).

Table 3: Orientation towards an attractive vocational specialization, male and female preparing a BEP in full-time vocational school

	Model 3a: Male (N=1247)		Model 3b: Female (N=1181)	
	Deviation estimated probability for the reference	Odds ratio	Deviation estimated probability for the reference	Odds ratio
<i>Estimated probability for the reference</i>	.64		.43	
Type of district (<i>ref. 20 000- <200 000 inh.</i>)				
Rural, urban less than 5 000 inhabitants	-.07*	.75	ns	
5000-<20 000 inh.	ns		ns	
>=200 000 inhab. (inc. Paris)	-.06*	.77	ns	
Mark at <i>Brevet (ref. 7-8)</i>				
Lower than 7	-.07**	.74	-ns	
9 to 10	ns		ns	
10 and higher	ns		.16***	1.88
<i>Father's status (réf. clerical worker)</i>				
Farmer	-.36***	.22	ns	
Artisans, shopkeepers and employers	ns		ns	
Manager, higher-grade professional, administrator, official	ns		ns	
Intermediate-grade (incl. technicians, supervisors)	ns		ns	
Skilled manual workers	ns		ns	
Unskilled manual workers	ns		ns	
Without activity, unknown	ns		ns	

Source: Ministry of Education, panel of 95' entrants in secondary education. Sample restricted to pupils oriented towards a BEP cycle in full-time vocational school.

***=p<.0001; **=p<.01; *=p<.05; ns: not significant.

Comment: Every other variables entered in the model being equal, female having passed the *Brevet* (grades higher than 10) almost double their chances (odds ratio=1.88) to choose an attractive specialization, compared to female having poorly achieved (grades between 7 and 8).

Table 4: Social origin and vocational specialization (vocational secondary schools)

Group of specializations	Managers, Professionals shop keepers	Artisans, farm holders	Intermediate professionals , clerks	Manual workers, Unknown occupation	Total
<i>Male</i>					
Services (30%)	14	5	31	50	100
Craft and agriculture (22%)	10	6	29	55	100
Electricity, electronics (22%)	11	5	34	50	100
Construction, manufacturing (20%)	9	5	28	58	100
Metal working (6%)	6	4	24	66	100
Total males (100%)	11	5	30	54	100
<i>Female</i>					
Hairdresser (5%)	12	9	34	45	100
Health, social services (18%)	9	6	33	52	100
Sale (30%)	8	5	26	60	100
Administrative tertiary (28%)	7	4	27	62	100
Hotel-catering (6%)	8	6	27	59	100
Manufacturing industry (13%)	7	5	26	62	100
Total females (100%)	8	5	28	59	100

Source: Ministry of Education, school year 2002-2003. Cramer's V: Male=.066; Female=.056

Table 5: Social origin and vocational specialization (agricultural education)

Group of Specializations	Farm owners	Mana- gers	Interme- diate profess.	Artisans, shop keepers	Clerks	Manual workers	Total
BEP Agr. Plant	44	4	7	7	20	18	100
BEP Fish, horse, dog breeding	6	12	15	16	32	19	100
BEP Forest, Country developpt	7	9	16	10	32	26	100
BEP Horticulture	10	8	15	10	30	27	100
BEP Services	6	5	10	9	34	36	100
CAP Horticulture, Landscape	4	6	12	8	37	33	100
CAP Services and production	8	3	7	6	30	46	100
Other	11	6	12	8	29	34	100
	16	5	11	9	30	29	100

Source: Ministry of Agriculture, school year 2003-2004. 53400 students enrolled in a terminal form of agricultural education, whose father's occupation is known. Cramer's V=0.21

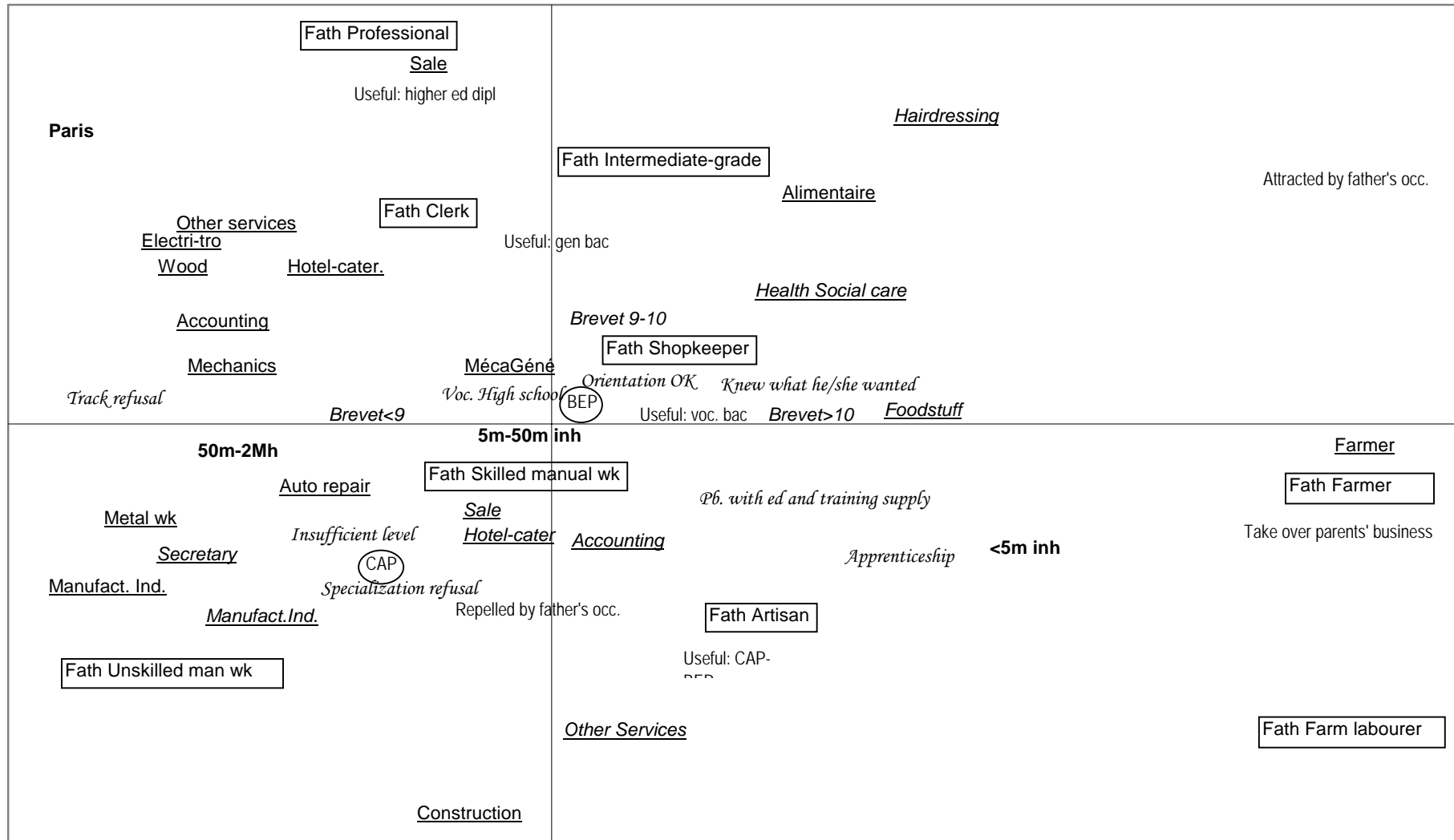
Table 6: Pupils' responses about orientation process and future plans

	Orientation				Plans		
	Wishes refused?			Insuf- ficient results at school: yes	Knew what he/she wanted : yes	Attracted to parent's occupation: yes	Plan to take over family business: yes
	No	General / techn. track refused	Speciali- sation refused				
Female						Mother (12)	
Accounting	60	22	18	45	46	12	0
Dressmaking	52	21	27	40	41	8	0
Foodstuff	77	5	18	27	66	10	0
Hairdresser	77	12	11	19	76	11	0
Health/social	65	21	14	33	69	13	0
Hotel-catering	69	14	17	28	66	16	0
Div. Manufactur.	61	15	24	19	63	0	0
Sale	70	13	17	28	56	11	2
Secretary	57	24	19	41	42	11	0
Div. Services	63	15	22	39	60	19	0
Male						Father (17)	
Accounting	52	32	16	43	45	12	1
Auto-repair	79	8	13	33	70	15	2
Construction	71	11	18	32	71	22	6
Electricity	68	20	12	29	53	15	2
Farmer	77	7	16	28	76	32	17
Foodstuff	86	5	9	24	80	9	3
Hotel-catering	81	10	9	24	76	13	1
Mechanics	65	18	17	40	50	19	2
Metal work	65	14	21	36	68	20	2
Sale	59	26	15	31	61	14	4
Services	60	21	19	33	52	13	2
Woodwork	80	11	9	22	60	11	1
Total	68	16	16	32	60		2

Source: Ministry of Education, panel of pupils enrolled in secondary education in 1995.

Comment: Among future male farmers, 77 % say that they had been oriented according to their wishes, as 7 % would have continued on in general education, and 16 % had asked for another specialization. 28 % only see their orientation as the outcome of an insufficient level. Up to 76 % say that they have had no difficulty to choose an orientation, because they already knew what they wanted to do. 32 % feel attracted by their father's occupation, and 17 % intend to take over their parents' business.

Figure 2: The determinants of a vocational specialization



Source: Ministry of Education, panel of pupils enrolled in secondary education in 1995. Sample restricted to pupils who have been oriented towards vocational high-school or apprenticeship.

Fath. Clerk	Father's occupational status
<u>Hotel-catering</u>	Vocational specialization (Male)
<u>Hotel-catering</u>	Vocational specialization (Female)
<i>Insufficient level</i>	Information regarding the orientation process
50m-2M inh	Size of the district