



HAL
open science

Multi-collège catchment areas in Paris: an effective tool for combating social segregation?

Julien Grenet, Youssef Souidi

► **To cite this version:**

Julien Grenet, Youssef Souidi. Multi-collège catchment areas in Paris: an effective tool for combating social segregation?. 2018. halshs-02520801

HAL Id: halshs-02520801

<https://shs.hal.science/halshs-02520801>

Submitted on 26 Mar 2020

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

IPP Policy Briefs

No. 35

September 2018

Julien Grenet
and Youssef Souidi

www.ipp.eu



MULTI-COLLÈGE CATCHMENT AREAS IN PARIS: AN EFFECTIVE TOOL FOR COMBATING SOCIAL SEGREGATION?

Summary

Collèges (middle schools) in Paris have some of the highest levels of social segregation in France due to wide social contrasts between geographically close neighbourhoods and to a large number of pupils from the most privileged backgrounds attending private schools. Because of this, the Council of Paris voted in January 2017 to create three two-*collège* catchment areas in the 18th and 19th *arrondissements*. The scheme consisted of defining joint catchment areas (*secteurs*) for several middle schools in order to make their intakes socially more diverse. The provisional results for the first year of the experiment (2017-2018) are encouraging. Two of the three catchment areas achieved their objective of greater social diversity and also reduced the number of pupils enrolling in private schools. Although in the short term the social composition of the schools in the third catchment area was not rebalanced by the scheme, from the results of the assessment we can identify several ways to improve this. ■

- At the start of the 2017-2018 academic year, three two-*collège* catchment areas were defined in the 18th and 19th *arrondissements* of Paris, covering nearly 700 pupils entering 6th grade (the first year of middle school).
- Two separate procedures were used to assign pupils to schools in the newly created catchment areas: '*montée alternée*' (in the Berlioz-Coysevox catchment area) and regulated choice (in the Curie-Philippe and Bergson-Pailleron catchment areas).
- At the end of their first year of existence, the Berlioz-Coysevox and Bergson-Pailleron catchment areas had increased social diversity in the *collèges* concerned and caused the number of pupils enrolling in private schools to fall.
- The failure of the Curie-Philippe catchment area to rebalance the social composition of these two priority education network (REP) schools illustrates the difficulties involved in making the transition from one assignment system to another.

The Institut des Politiques Publiques (IPP) has been developed through a scientific partnership between the Paris School of Economics (PSE) and the Centre for Research in Economics and Statistics (CREST). IPP's aim is to promote quantitative analysis and evaluation of public policy using cutting-edge research methods in economics.

Several recent reports and studies have identified the existence of a high degree of social segregation in secondary schools in France, explained by a combination of high levels of residential segregation and by the fact that privileged families use a variety of strategies to bypass the catchment area system (Merle, 2012; Fack and Grenet, 2013; Ly and Riegert, 2016). In view of these findings, the Ministry of Education launched a plan at the end of 2015 to increase social diversity in middle schools (age 11 to age 14) using initiatives involving the school community in around twenty pilot areas, including the Paris *académie* (education authority) (Grenet, 2015; MENESR, 2016a, 2016b).

It was against this backdrop that our team began a scientific collaboration at the start of 2016 with the City of Paris (Ville de Paris) and the Paris *académie*¹. This collaboration led to the trial of a new method for assigning pupils to publicly-run middle schools in response to the difficulties posed by the operation of the catchment area system in Paris. The proposed scheme consists of setting up joint catchment areas for multiple schools in order to make the intake of each socially more diverse.

On 30 January 2017, the Council of Paris voted to create three two-*collège* catchment areas encompassing six middle schools in the 18th and 19th *arrondissements* of Paris. The pairs of middle schools involved in the trial from the start of the 2017-2018 academic year were Hector Berlioz and Antoine Coysevox (18th), Marie Curie and Gérard Philipe (18th), and Henri Bergson and Édouard Pailleron (19th). At the start of the 2017-2018 academic year, nearly 700 pupils starting middle school were allocated places in the three newly created two-*collège* catchment areas using two different methods: '*montée alternée*' and regulated choice.

The results presented in this paper concern the first wave of assignments to schools in the multi-*collège* catchment areas introduced in Paris at the start of the 2017-2018 academic year. At the end of the first year of the trial, using administrative data held by the *académie* (see box), it is possible to accurately assess the impact of the multi-*collège* catchment areas on social diversity in the middle schools concerned and to measure behavioural responses to the different types of assignment scheme².

PARIS: THE ACADÉMIE WITH THE HIGHEST LEVELS OF SOCIAL SEGREGATION IN MIDDLE SCHOOLS

Because characteristic features of other major cities are amplified in Paris, the Paris *académie* is the ideal place to test innovative solutions to the problems caused by the way the catchment area system currently operates. In the French capital, a socially highly diverse population, a large number of schools, and some of the highest levels of educational segregation are concentrated in a relatively small area.

(1) This project, which won an award as part of the presidential initiative '*La France s'engage*', was funded by the Fonds d'Expérimentation pour la Jeunesse, set up by the Ministry for Youth.

Some of the highest levels of segregation in France

In 2017-2018, there were nearly 85,000 pupils enrolled in the 175 middle schools in Paris. **One of the distinctive features of the Paris *académie* is the size of its private education sector, which enrolls nearly 35% of pupils at 60 private *collèges* under contract.**

DATA USED FOR THE ASSESSMENT

The student register data list all pupils educated at publicly-run and private middle schools under contract in Paris each year during the 2011-2012 to 2017-2018 period. In addition to information about the school they attended and the grade level they were in, the administrative files also indicate each pupil's social background, measured by the socio-professional category (PCS) of their parent or guardian, and their home address. For the purposes of the assessment, we were given permission to work with an anonymised set of these data, so that we could compare the social composition of the middle schools involved in the trial with the social composition of their respective catchment areas, and measure avoidance behaviours very precisely. The catchment area to which each pupil belongs (whether she attends the publicly-run middle school in her catchment area, a publicly-run school in a different catchment area, or a private school) was identified by cross-checking the geolocated addresses of the pupils with the middle schools' catchment area boundaries. The social composition of each catchment area was then calculated using the PCS data for the parents or guardians of all pupils living in that catchment area.

In the Curie-Philipe and Bergson-Pailleron two-*collège* catchment areas, the Paris *académie*'s administrative data were supplemented by data collected as part of the regulated choice procedure set up to assign pupils entering middle school. By cross-checking these data with the files for attendance at the start of the 2017-2018 academic year, it is possible to assess the ability of this procedure to achieve its assigned social diversity objective, and to compare the social diversity observed as a result of allocation with actual diversity at the start of the academic year.

The middle school population in Paris appears to be more privileged than the national average. In 2017-2018, according to the Ministry of Education's socio-professional categories (PCS) classification, 51% of middle school pupils in Paris come from 'very privileged' backgrounds (executives, company directors, intellectual professions, liberal professions), 8% come from 'privileged' backgrounds (middle-ranking professions), 24% are from 'average' backgrounds (craftspeople, shopkeepers, employees) and 17% from 'underprivileged' backgrounds (blue-collar workers and people who are not in work). This social distribution is markedly more privileged than that of French middle school pupils overall (of whom 23% are from very privileged backgrounds, 13% from privileged backgrounds, 27% from average backgrounds and 37% from underprivileged backgrounds).

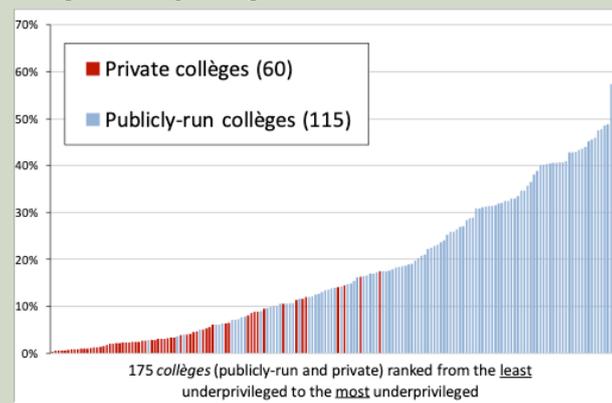
However, the social composition of middle schools in Paris differs greatly from the average social composition. **Levels of segregation at middle schools in Paris are extreme:** whereas pupils from underprivileged

(2) For a detailed report on the first year of existence of the multi-*collège* catchment areas in Paris, please refer to the presentations given to the monitoring committees (Grenet and Souidi, 2017a, 2017b, 2018).

backgrounds represent only 17% of all middle school pupils in Paris, the percentage varies from 0.3% at the most privileged *collège* in Paris to 63% at the most underprivileged (see Figure 1). The social contrast between publicly-run middle schools and private middle schools is striking: whereas 24% of pupils at publicly-run schools come from underprivileged backgrounds, at private schools this figure is only 3%. Nationally, the middle schools in Paris appear to be the most segregated in France, ahead of middle schools in the *académies* of Versailles and Lille.

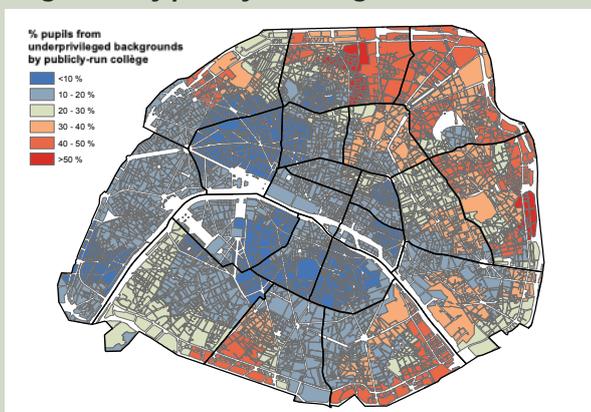
Another characteristic feature of the Paris *académie* is that this social segregation between publicly-run middle schools is not just a general reflection of the social contrast between the poorer *arrondissements* of north-eastern Paris and the more affluent *arrondissements* in the centre and west of the capital, but can be identified at a very fine spatial scale. Segregation between publicly-run middle schools exists within almost all peripheral *arrondissements* (see Figure 2).

Figure 1. Proportion of pupils from underprivileged backgrounds by collège in Paris, 2017-2018



Key: each bar of the graph corresponds to one of the 175 publicly-run collèges or private collèges under contract in Paris and indicates the proportion of pupils from underprivileged backgrounds (parents who are blue-collar workers or are not in work) attending that school at the start of the 2017-2018 academic year. Publicly-run collèges are represented by blue bars and private collèges by red bars.
Source: Paris *académie* pupil database, 2017-2018, calculations by the authors.

Figure 2. Proportion of pupils from underprivileged backgrounds by publicly-run collège in Paris, 2017-2018



Key: this map shows the boundaries of the catchment areas of the 115 publicly-run middle schools in the capital and the proportion of pupils from underprivileged backgrounds (parents who are blue-collar workers or are not in work) attending each at the start of the 2017-2018 academic year.
Source: Paris *académie* pupil database and City of Paris Education Department, calculations by the authors.

Explanatory factors: residential segregation and pupils leaving for the private sector

Three factors appear to explain the high levels of segregation found at middle schools in Paris: residential segregation, which to a large extent dictates the social composition of these schools because of the catchment area system used for publicly-run schools (pupils are assigned to the middle school for the catchment area where they live); attendance of private middle schools, which take nearly half of pupils from privileged backgrounds away from publicly-run schools; exemptions, and special subject tuition streams offered by some schools (music, dance, sport, etc.), which enable certain pupils to attend a school outside the catchment area where they live.

Analysis of the social segregation at middle schools in Paris on the basis of these different factors shows that **nearly half of the segregation observed comes from differences in the social composition of the catchment areas of publicly-run schools.** In other words, if all middle school pupils in Paris attended the publicly-run school for the catchment area where they live, the level of social segregation (measured here using the generalised entropy index³) would be half the level currently observed. **The other half of the segregation is due almost entirely to pupils from privileged backgrounds entering private sector education.** Exemptions and special subject tuition streams make only a minor contribution to segregation in middle schools (less than 5%).

THREE MULTI-COLLÈGE CATCHMENT AREAS TRIALLED AT THE START OF THE 2017-2018 ACADEMIC YEAR

To try to increase social diversity at middle schools in the capital, the Paris City Council and the *académie* of Paris decided to trial a new method of allocating places at publicly-run middle schools: multi-*collège* catchment areas.

A multi-*collège* catchment area is a joint catchment area defined for several middle schools that are geographically close but have very different social compositions. This type of scheme, which is designed to be used in urban contexts, can group two, three or even four schools together if the population density permits. The aim is to enlarge the catchment areas from which the schools recruit pupils in order to rebalance their intakes socially. Although the multi-*collège* catchment areas currently being trialled in Paris involve only publicly-run middle schools, there seems to be no technical obstacle to private schools eventually being included.

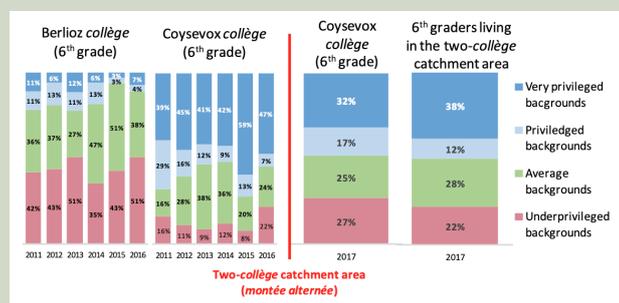
There are several possible methods for assigning pupils in a multi-*collège* catchment area. In Paris, two different procedures were chosen by the monitoring committees set up in the three trial catchment areas: '*montée alternée*' (in the Berlioz-Coysevox catchment area) and regulated choice (in the Curie-Philippe and Bergson-Pailleron catchment areas).

(3) The generalised entropy index measures the degree of separation of social groups between different middle schools and is calculated as the difference between the social diversity (entropy) of each school and the overall social diversity (at *académie* level). For more details about this index, see Fack et al. (2014) and Givord et al. (2016).

Berlioz-Coysevox catchment area (18th): 'montée alternée'

Of the three two-*collège* catchment areas introduced for the start of the 2017-2018 academic year, **the Berlioz-Coysevox catchment area is the one with the greatest social contrast between schools** (see left-hand section of Figure 3). During the 2011-2017 period, Hector Berlioz (a school in the priority education network since 2015) had on average 40 to 50% underprivileged pupils in 6th grade (*sixième*), whereas this proportion was only 10 to 20% at Antoine Coysevox, despite the two schools being only 600 metres apart.

Figure 3. Social composition of 6th grade pupils at Hector Berlioz and Antoine Coysevox collèges (18th arrondissement), 2011-2012 to 2017-2018



Key: the left-hand section of the figure shows the change in the social composition of the 6th grade pupils at Hector Berlioz and Antoine Coysevox between 2011-2012 and 2016-2017, when the catchment areas for these two middle schools were separate. The right-hand section of the figure shows the social composition of the 6th grade pupils at Coysevox at the start of the 2017-2018 academic year, which is the first year of the two-*collège* catchment area trial, when all new pupils starting in the 6th grade from the old Berlioz and Coysevox catchment areas were assigned to Coysevox. The composition of the 6th grade at Coysevox is compared to that of all 6th graders living in the Berlioz-Coysevox double catchment area in 2017-2018, regardless of middle school attended (publicly-run school in the catchment area, publicly-run school outside the catchment area or private school). The pupils are split into four social groups according to the socio-professional category (PCS) of their parent or guardian; the PCS grouping proposed by the Ministry of Education is used. **Source:** Paris *académie* pupil database and City of Paris Education Department, calculations by the authors.

The monitoring committee of the Berlioz-Coysevox catchment area opted to use the 'montée alternée' procedure, which consists of allocating places alternately at one school or the other to pupils living in the double catchment area who are starting middle school. Pupils continue to attend the same middle school until the end of 9th grade (*troisième*, which is the final year of middle school). With this configuration – after a transitional period that can last for several years – each middle school will only be simultaneously teaching two cohorts of pupils living in the joint catchment area: in even years, one school will teach only 6th graders and 8th graders and the other will teach only 7th graders and 9th graders; in odd years, this configuration will be reversed.

In the specific case of the Berlioz-Coysevox catchment area, it was decided that all pupils entering the 6th grade in the double catchment area would be assigned to Coysevox at the start of the 2017-2018 academic year. Because the school was not big enough to accommodate a double cohort of pupils in the 6th grade in addition to the pupils already attending, all pupils in the 8th grade

(*quatrième*) at Coysevox in 2016-2017 were transferred to Berlioz for their 9th grade in 2017-2018.

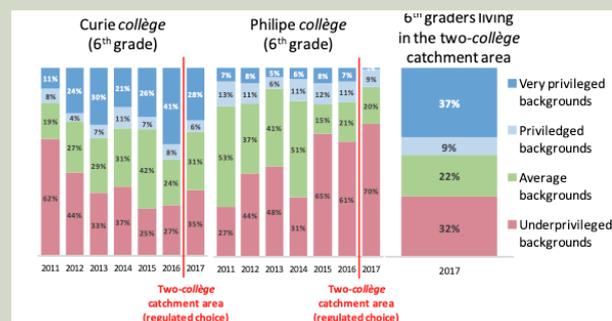
The establishment of the 'montée alternée' system in this catchment area therefore involved the formation of two separate groupings: the pupils entering the 6th grade were grouped together at Coysevox and the pupils entering the 9th grade were grouped together at Berlioz. The pupils in the 7th and 8th grades in 2017-2018 were unaffected by the trial and would continue to attend their original school.

Curie-Philippe (18th) and Bergson-Pailleron (19th) catchment areas: regulated choice

Although they have less socially contrasting profiles than Berlioz and Coysevox, the middle schools in the Curie-Philippe (18th) and Bergson-Pailleron (19th) catchment areas have seen their social composition start to diverge since the start of the 2010s.

Marie Curie and Gérard Philippe are both in the priority education network (*réseau d'éducation prioritaire* or REP) because of the historically underprivileged profile of their pupils. The gradual gentrification of the Marie Curie catchment area and the setting up at the start of the 2012 academic year of a special music tuition stream (*classe à horaires aménagés musique* or CHAM) at the school contributed to an accentuation of the social contrast between the two schools: in 2016-2017, 61% of pupils entering the 6th grade at Gérard Philippe were from underprivileged backgrounds, compared to 27% at Marie Curie (see Figure 4). This finding justified the setting up of a joint catchment area for the start of the 2017-2018 academic year.

Figure 4. Social composition of 6th grade pupils at Marie Curie and Gérard Philippe collèges (18th arrondissement), 2011-2012 to 2017-2018



Key: the left-hand section of this figure shows the change in the social composition of the 6th grade at Marie Curie and Gérard Philippe between 2011-2012 and 2016-2017, when the catchment areas of these two middle schools were separate, and in 2017-2018, when they had been combined and pupils were assigned to the schools using a regulated choice procedure. The right-hand section of the graph shows the social composition of 6th graders living in the Curie-Philippe double catchment area in 2017-2018, regardless of school attended. **Source:** Paris *académie* pupil database and City of Paris Education Department, calculations by the authors.

Because of their geographical proximity and the comparable sociology of their catchment areas, Henri Bergson and Édouard Pailleron have a relatively similar social composition, consisting of around 40% pupils from underprivileged backgrounds (see Figure 5). Since the start of the 2010s, however, the proportion of pupils

from privileged or very privileged social backgrounds has been significantly higher at Bergson (around 40%) than at Pailleron (around 20%). It was to combat this phenomenon and try to stop the increasing tendency for pupils to leave for private sector education in the Pailleron catchment area (the percentage had risen from 42% in 2011 to 54% in 2016) that the decision was made to create a joint catchment area with Bergson.

In both catchment areas, the monitoring committees opted for a regulated choice procedure based on an algorithm for allocating places that was designed by our research team⁴.

This algorithm is a modified version of the Gale-Shapley (deferred acceptance) algorithm (Gale and Shapley, 1962), which many countries use to assign pupils to schools. To achieve the social diversity objective, the pupils in the enlarged catchment area are split into four income groups based on the family quotient (QF) of their parents⁵ (or into a separate group if no QF is given), calculated as the net taxable income divided by the number of 'fiscal shares' (*parts fiscales*, based on the number of people in the household and the number of dependants). The places at each school are then distributed between the different QF groups so as to reflect the distribution of these groups in the catchment area. The places reserved for each QF group are allocated on the basis of expressed wishes and priority criteria decided by the monitoring committees. If, within a given income group, the number of pupils applying to a particular school exceeds the number of places reserved for that group at the school, priority is given to pupils with disabilities, then to pupils with a sibling already at the school, and finally, to pupils living nearer, relatively speaking, to that school than to the other one⁶.

BERLIOZ-COYSEVOX CATCHMENT AREA: A SHARP INCREASE IN SOCIAL DIVERSITY AND A REDUCTION IN PUPILS LEAVING FOR PRIVATE SECTOR SCHOOLS

Of the three two-*collège* catchment areas trialled in 2017-2018, the Berlioz-Coysevox catchment area appears to be the most emblematic because of the scale of the social contrast between the two middle schools. It is also the catchment area where the biggest increase in social diversity was recorded as a result of setting up the joint catchment area and using the 'montée alternée' procedure.

6th grade pupils (grouped together at Coysevox)

At the start of the 2017-2018 academic year, all pupils entering the 6th grade who lived in the former Berlioz and Coysevox catchment areas were assigned to Coysevox.

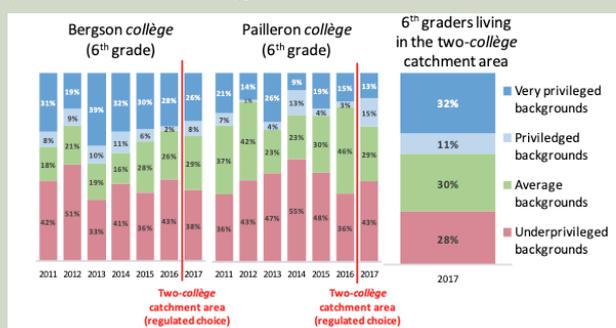
This change in the assignment rules did not erode the number of pupils entering the 6th grade at Coysevox. On the contrary, the number of 6th graders at this middle school in 2017-2018 (219 pupils) was higher than the total number of 6th graders at Berlioz and Coysevox in the 2016-2017 academic year (81 and 111 respectively, making a total of 192 pupils).

Grouping the 6th-grade pupils together at Coysevox had particularly marked effects on social diversity at the school (see right-hand section of Figure 3).

Whereas in 2016-2017, the social composition of the 6th grade at Coysevox (47% pupils from very privileged backgrounds, 22% from underprivileged backgrounds) was diametrically opposed to that at Berlioz (7% pupils from very privileged backgrounds, 51% from underprivileged backgrounds), the social profile of the double cohort of 6th graders at Coysevox at the start of the 2017-2018 academic year was much more balanced (32% pupils from very privileged backgrounds and 27% from underprivileged backgrounds), and very similar to that of the 6th grade pupils living in the Berlioz-Coysevox joint catchment area (regardless of whether they attend the school for the catchment area where they live).

One of the main lessons learned from the assessment is that setting up the Berlioz-Coysevox two-*collège* catchment area led to a reduction in the number of pupils leaving for private sector education: whereas in 2016-2017, 24% of parents of children entering 6th grade living in one or other of the catchment areas chose to send their children to a private school, this proportion fell to 18% in 2017-2018. To be more specific, this drop in the number of children attending private sector education is explained by a 'return to public education' by parents

Figure 5. Social composition of 6th grade pupils at Henri Bergson and Édouard Pailleron collèges (19th arrondissement), 2011-2012 to 2017-2018



Key: the left-hand section of this figure shows the change in the social composition of the 6th grade pupils at Henri Bergson and Édouard Pailleron between 2011-2012 and 2016-2017, when the catchment areas of these two middle schools were separate, and in 2017-2018, when they had been combined and pupils were assigned to schools using the regulated choice procedure. The right-hand section of the figure shows the social composition of 6th graders living in the Bergson-Pailleron double catchment area in 2017-2018, regardless of school attended. **Source:** Paris *académie* pupil database and City of Paris Education Department, calculations by the authors.

(4) For a detailed presentation of the allocation algorithm, see Grenet (2017). Unlike the 'montée alternée' method, the regulated choice procedure is not restricted to two-*collège* catchment areas and can be applied to catchment areas of three or more schools.

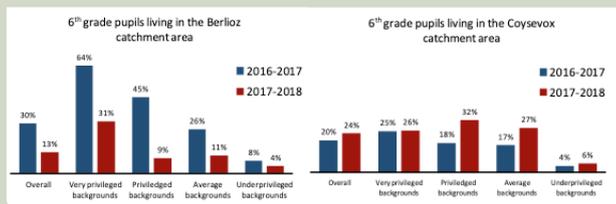
(5) There were two reasons for the decision to use parental income rather than PCS to assess pupils' social background: firstly, PCS is not currently recorded in the administrative files for primary age children and therefore cannot be extracted for the purposes of this procedure; and secondly, there was a risk with using PCS as an allocation criterion that it could be manipulated for strategic purposes.

(6) The relative distance criterion is used as follows: supposing two pupils, P1 and P2 have put school C1 as their first choice and school C2 as their second choice, but there is only one place left at school C1. Pupil P1 lives 150 m from school C1 and 300 metres from school C2, and pupil P2 lives 500 m from school C1 and 550 m from school C2. Because, relatively-speaking, pupil P1 lives closer to school C1 than school C2 (150 metres) than pupil P2 (50 metres), pupil P1 has priority for being given a place at school C1, whereas pupil P2 has priority for school C2.

from privileged or very privileged backgrounds in the old Berlioz catchment area: whereas in 2016-2017, 45% and 64% of them respectively chose to avoid this priority education network school by enrolling their children in private schools at the start of the 6th grade, only 9% and 31% of them respectively chose to do so in 2017-2018 (see left-hand section of Figure 6).

By contrast, in the old Coysevox catchment area, the introduction of the two-*collège* catchment area led to an increase in the fraction of pupils enrolling in private middle schools, but to a much lesser degree (see right-hand part of Figure 6), so that, across the joint catchment area, the proportion of pupils attending the publicly-run school for the catchment area where they live increased.

Figure 6. Share of 6th grade pupils enrolled in a private middle school among those living in the Berlioz-Coysevox joint catchment area (18th arrondissement) according to social category, 2016-2017 and 2017-2018



Key: the two graphs of this figure show the 6th grade pupils according to whether they live in the old catchment area of Berlioz (left-hand graph) or the old catchment area of Coysevox (right-hand graph). The vertical bars represent the proportion of pupils enrolled in a private middle school in 2016-2017 and 2017-2018 according to their social background. In 2016-2017, the catchment areas of the two schools were separate, whereas in 2017-2018 they were amalgamated and all 6th grade pupils were assigned to Coysevox. Source: Paris *académie* pupil database and City of Paris Education Department, calculations by the authors

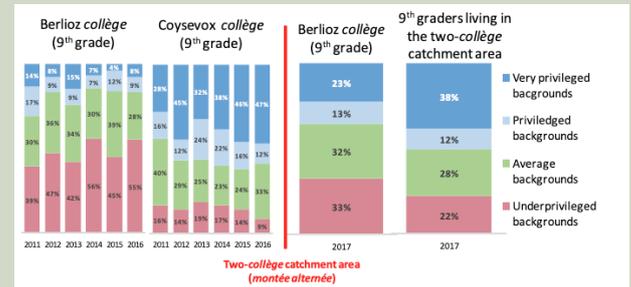
9th grade pupils (grouped together at Berlioz)

While the transfer of 9th grade (*troisième*) pupils from Coysevox *collège* to Berlioz *collège* significantly increased social diversity in the 9th grade at Berlioz, this improvement was not as pronounced as in the 6th grade at Coysevox: the 9th graders at Berlioz were still on average less privileged than the pupils living in the double catchment area (see Figure 7).

Two factors can explain this. The first is that nearly 20% of the parents of pupils who were attending the 8th grade at Coysevox in 2016-2017 chose to enroll their pupils in a private middle school for the 9th grade because of the introduction of the double catchment area. This 'flight' to the private sector illustrates one of the difficulties of introducing a multi-*collège* catchment area: during the transitional phase, it only alters the social composition of some year groups (in this case, the 6th grade at Coysevox and the 9th grade at Berlioz); it does not immediately achieve the desired social diversity at each school. Under these conditions, temporary maintenance of the social differences between schools tends to cause avoidance behaviour to continue at the school that was initially the most underprivileged.

There is another factor that could also explain why the progress with diversity in the 9th grade at Berlioz *collège* was

Figure 7. Social composition of 9th grade pupils at Hector Berlioz and Antoine Coysevox collèges (18th arrondissement), 2011-2012 to 2017-2018



Key: the left-hand section of the figure shows the change in social composition of 9th grade pupils at Hector Berlioz and Antoine Coysevox between 2011-2012 and 2016-2017, when the catchment areas for these two middle schools were separate. The right-hand section of the figure shows the social composition of 9th grade pupils at Berlioz *collège* at the start of the 2017-2018 academic year, which is the first year of the two-*collège* catchment area trial, when all pupils who were enrolled in 8th grade at Berlioz and Coysevox in 2016-2017 were grouped together at Berlioz the following year for their 9th grade. The composition of the 9th grade at Berlioz is compared to that of all 9th grade pupils living in the Berlioz-Coysevox double catchment area, regardless of the middle school attended. Source: Paris *académie* pupil database and City of Paris Education Department, calculations by the authors.

not as good as in the 6th grade at Coysevox: the 'return to public education' phenomenon observed among parents from privileged backgrounds in the Berlioz catchment area when pupils were entering the 6th grade could not happen (or could only be very limited) in the case of pupils entering the 9th grade, because it was difficult for parents who had chosen not to send their children to Berlioz when starting 6th grade to reverse that decision.

REGULATED CHOICE: MIXED RESULTS

The improvement in social diversity in the two two-*collège* catchment areas that used the regulated choice method to assign students was not as good as in the Berlioz-Coysevox catchment area because the schools whose catchment areas were combined were less socially polarised at the start. **Although the procedure worked well in the Bergson-Pailleron catchment area, its effects were more disappointing in the Curie-Philipe catchment area.**

Bergson-Pailleron catchment area: objectives met

In April 2017, parents of pupils in the last grade of elementary school (*CM2*, i.e. 5th grade) living in the old Bergson and Pailleron catchment areas were invited to fill out a form indicating their preferences for the two middle schools and to provide evidence enabling their family quotient (QF) and any priorities (disability, sibling attendance, distance from home to school) to be determined.

The procedure was completed for 216 pupils in total, i.e. 72% of pupils entering the 6th grade in the catchment area. Of the pupils for whom the form was filled out and proof of income supplied (approximately two thirds of pupils), 60% put Bergson as their first choice and 40% put Pailleron as their first choice. For pupils for whom a form was not filled out and no QF evidence was given, the decision was made to put the nearest middle school to their home as their first choice. At the end of the allocation procedure, 91% of pupils

for whom a form had been filled out and QF evidence had been provided were assigned to their first choice school. Equal distribution of places between QF groups ensured that there was a comparable distribution of parental incomes at both schools.

The use of the regulated choice procedure in the Bergson-Pailleron joint catchment area led to a significant increase in the number of pupils attending the two schools and, as observed in the Berlioz-Coysevox catchment area, a significant reduction in the number of pupils enrolled in a private middle school: whereas, in the 2011-2016 period, between 35 and 39% of parents in the Bergson and Pailleron catchment areas chose private sector education for their children entering 6th grade, this proportion fell to 25% at the start of the 2017-2018 academic year. This reduction in the number of children leaving for private education is due entirely to the Pailleron catchment area, where the share of 6th graders enrolled in a private school halved between 2016-2017 (42%) and 2017-2018 (21%). This contributed to the sharp increase in the number of 6th grade pupils enrolled in the Bergson and Pailleron public middle schools at the start of the 2017-2018 academic year (100 pupils at Bergson and 104 pupils at Pailleron) compared to the previous year (86 at Bergson and 78 at Pailleron).

While the regulated choice procedure produced balanced social compositions at both middle schools at the start of the 2017-2018 academic year (see Figure 5), the proportion of pupils from very privileged backgrounds remained significantly higher at Bergson (26%) than at Pailleron (13%). A cross-check of the data from the assignment procedure with the attendance files at the start of the academic year reveals that this gap is largely due to the procedure used to impute choices for pupils for whom a form was not filled out and no QF evidence was provided. To resolve this difficulty, the decision was made that, from the 2018-2019 academic year, pupils for whom no QF evidence was provided would no longer have their first choice school assigned on the basis of their address, but randomly.

Curie-Philippe catchment area: more disappointing results

Although the same regulated choice procedure that was used in the Bergson-Pailleron catchment area was used for assigning pupils to middle schools in the Curie-Philippe catchment area, it did not produce the results that were hoped for from the point of view of social diversity. A number of structural difficulties explain this disappointing result and can be used to identify ways to improve it.

The assignment procedure in this double catchment area involved 236 pupils, i.e. 88% of pupils living in the catchment area who were starting middle school. Unlike in the Bergson-Pailleron catchment area, there were marked differences between the choices expressed by the parents of pupils in the Curie-Philippe catchment area according to their income level. The most privileged parents tended to put Curie as their first choice more often than the least privileged parents. One specific feature of the procedure used in the Curie-Philippe catchment area

is that the distribution of places reserved for the different QF quartiles had to be adjusted to take account of the presence at Marie Curie of a special music tuition stream (CHAM) in the 6th grade, which accepts pupils on the basis of an application, who tend to be from more socially privileged backgrounds. At the end of the allocation procedure, 74% of pupils for whom a form was filled out and QF evidence provided (72% of all pupils) were allocated a place at their first choice school.

Although the regulated choice procedure produced a balanced distribution of pupils based on parental income, analysis of the attendance data for the start of the academic year shows a big imbalance in the social composition of the two middle schools (measured on the basis of PCS), one that is comparable to previous years (see Figure 4): at the start of the 2017-2018 academic year, the proportion of underprivileged pupils was 70% at Gérard Philippe compared to 35% at Marie Curie. Unlike in the other two multi-*collège* catchment areas, the social diversity objective was therefore not met in the Curie-Philippe catchment area.

A first set of factors within the allocation procedure itself needs to be found. Comparison of the social composition of the two schools reveals that part of the social imbalance noticed at the start of the academic year already existed following the assignment procedure, even though the composition of the two schools was balanced on the basis of income levels. There are two reasons for this paradox. Firstly, in each QF group, the pupils that put Gérard Philippe as their first choice almost always came from average and underprivileged backgrounds. In the absence of any information about their parents' PCS, this form of social polarisation based on choice, within each QF group, helped to cause an imbalance in the social composition of the pupils allocated to the two schools. Secondly, an analysis of the data shows that using relative distance as the criterion for prioritising the pupils in a single income group gave an advantage to pupils from privileged backgrounds when it came to allocating places at Marie Curie.

A second set of factors explains why the differences in composition already present at the end of the allocation procedure were amplified at the start of the academic year: **nearly 40% of pupils assigned to either of the schools did not register there in September; most of them went to a private school instead.** This 'evaporation' phenomenon was more marked among pupils assigned to Gérard Philippe (42%) than among those assigned to Marie Curie (32%), especially among pupils from privileged and very privileged backgrounds. Although the regulated choice procedure did not significantly alter the rates of pupils leaving for private schools observed in previous years, it nevertheless helped to highlight the scale of this phenomenon and identified one of the structural causes of Gérard Philippe's lower resistance to losing pupils from privileged backgrounds to private schools: unlike Marie Curie, which since 2012 has had a special music tuition stream that has the effect of 'fixing' a population of pupils from privileged backgrounds at the school, Gérard Philippe has no such scheme to rely on. This asymmetry in the range of education offered by the two schools appears to be a serious obstacle to rebalancing their social composition.

CONCLUSION AND PERSPECTIVES

The provisional results from the first year of existence of multi-*collège* catchment areas in Paris are encouraging, though difficulties with the implementation of this ambitious experiment should prompt a certain amount of caution as regards the scheme's ability to improve social diversity at middle schools in the long term.

Two of the three two-*collège* catchment areas trialled at the start of the 2017-2018 academic year met their objectives: in the Berlioz-Coysevox catchment area, the '*montée alternée*' procedure considerably improved social diversity in the 6th and 9th grades at these two *collèges* with particularly socially diverse intakes; in the Bergson-Pailleron catchment area, the regulated choice procedure managed to reconcile achievement of the social diversity objective with the expression of families' school preferences. In both catchment areas, the scheme led to a 'return to public education' movement among privileged families living in the catchment area with the school avoided most by entering private sector education (Berlioz or Pailleron).

However, the failure of the Curie-Philippe catchment area to rebalance the social composition of these two priority education network schools, highlights the difficulties involved in the transition from one assignment system to another. Although technical adjustments could be envisaged to improve the procedure's performance (e.g. no longer using the home-school distance criterion as one of the priority criteria), other types of action should also be taken to change the perception of both schools and rebalance their social composition, starting with the introduction of a more attractive educational offering at Gérard Philippe (e.g. by launching a special tuition stream like the CHAM at Marie Curie).

During the transition to a multi-*collège* catchment area, the *montée alternée* system has undeniable advantages: it stabilises parental anticipation more quickly by reducing uncertainty about the social composition of the school to which their children have been assigned, while ensuring that pupils attending the same primary school are educated at the same middle school. However, this method of allocating places can only realistically be used in catchment areas expanded to two schools and requires complex reorganisation of the teaching structure at the two schools. A regulated choice procedure, on the other hand, can easily be extended to catchment areas of three or even four schools, and can accommodate subsequent reconfigurations, e.g. the inclusion of new schools. It also seems better to reserve regulated choice for catchment areas expanded to three or more schools, to avoid the negative effects caused by the binary choice offered to families in the case of two-*collège* catchment areas.

The ability of multi-*collège* catchment areas to increase social diversity at middle schools is not an end in itself and is only worthwhile if it has an impact in the longer term on educational inequalities. The scope of assessment must therefore be expanded to analyse the effects of social diversity on pupils' attainment and educational trajectories. With this aim in mind, our team has joined forces with researchers at Paris-Dauphine University and Sciences Po to conduct a vast survey of

around a hundred middle schools that have implemented initiatives to improve diversity since the start of the 2016-2017 academic year. The results of this survey, which is designed to track several cohorts of pupils throughout their time at middle school, should ultimately provide new findings concerning the effects of social diversity on pupils' cognitive and non-cognitive abilities.

Bibliographic References

- Fack G. et Grenet J., 2013, « Peut-on accroître la mixité sociale à l'école ? », *Regards Croisés sur l'Économie*, n° 12, p. 170-188.
- Fack G., Grenet J. et Benhenda A., 2014, *L'impact des procédures de sectorisation et d'affectation sur la mixité sociale et scolaire dans les lycées d'Île-de-France*, Rapport IPP n° 3, Institut des politiques publiques, Paris.
- Gale D. et Shapley L., 1962, « College admissions and the stability of marriage », *The American Mathematical Monthly*, vol. 96, n° 1, p. 9-15.
- Givord P., Guillerme M., Monso O. et Murat F., 2016, « Comment mesurer la ségrégation dans le système éducatif ? Une étude de la composition sociale des collèges français », *Éducation et formations*, n° 91, p. 21-51.
- Grenet J., 2015, « Favoriser la mixité sociale au collège : les enjeux d'une expérimentation », *The Conversation*, 25 novembre.
- Grenet J., 2017, « Procédure de choix régulier et affectation dans les secteurs bi-collèges », diapositives présentées dans le cadre des comités de suivi des secteurs multi-collèges. Lien : www.parisschoolofeconomics.com/grenet-julien/SMC/Choix_regule_07_2017.pdf
- Grenet J. et Souidi Y., 2017a, « Affectation des élèves du double secteur Hector Berlioz / Antoine Coysevox : constat de rentrée 2017-2018 », comité du suivi du secteur Berlioz-Coysevox. Lien : www.parisschoolofeconomics.com/grenet-julien/SMC/Berlioz_Coysevox_11_2017.pdf
- Grenet J. et Souidi Y., 2017b, « Affectation des élèves du double secteur Marie Curie / Gérard Philippe : constat de rentrée 2017-2018 », comité du suivi du secteur Curie-Philippe. Lien : www.parisschoolofeconomics.com/grenet-julien/SMC/Curie_Philipe_11_2017.pdf
- Grenet J. et Souidi Y., 2018, « Affectation des élèves du double secteur Henri Bergson / Édouard Pailleron : constat de rentrée 2017-2018 », comité du suivi du secteur Bergson-Pailleron. Lien : www.parisschoolofeconomics.com/grenet-julien/SMC/Bergson_Pailleron_01_2018.pdf
- Ly S.-T. et Riegert A., 2016, *Mixité sociale et scolaire et ségrégation inter- et intra-établissement dans les collèges et lycées français*, Cnesco, Paris.
- MENESR, 2016a, *Vademecum – Agir pour une mixité sociale et scolaire dans les collèges*, Ministère de l'Éducation nationale, de l'enseignement supérieur et de la recherche.
- MENESR, 2016b, *Agir pour une mixité sociale et scolaire dans les collèges. Retours d'expériences et projets des territoires pilotes*, Ministère de l'Éducation nationale, de l'enseignement supérieur et de la recherche.
- Merle P., 2012, *La ségrégation scolaire*, La Découverte, collection « Repères », Paris.
- Authors:** Julien Grenet is a researcher at CNRS, an associate professor at the Paris School of Economics, and Deputy Director of the Institut des Politiques Publiques. Youssef Souidi is an economist at the Institut des Politiques Publiques and a PhD candidate at the Paris School of Economics.