

Social Diversity: A Review of Twelve Years of Targeting Priority Education Policies

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Abstract – Using data from the *Base Centrale Scolarité* (exhaustive data on pupils and schools, BCS), we highlight a number of stylised facts regarding changes to the targeting of priority education during the 2004-2016 period and segregation between middle schools. To start, we observe a decline in the proportion of disadvantaged pupils during the 2004-2014 period, followed by a period in which the focus of priority education is shifted to the most disadvantaged populations from 2015 onwards. The calculation of a mutual information index and its decomposition allows us to show that, in terms of social segregation, during a period characterised by relative stability with regard to inter-school segregation at the global level, the differences between middle schools in priority education and others tended to narrow until 2014 before beginning to increase again. The geographical decomposition of these indices shows that the fall in the share of disadvantaged pupils was driven by the highly urbanised regions, but that the refocusing of priority education on the least diverse middle schools concerned both rural and more urbanised areas alike.

JEL Classification: I24, I28

Keywords: segregation, territory, social origin, middle school, priority education

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The creation of *zones d'éducation prioritaires* (priority education areas, ZEP) during the early 1980s and, more generally, *éducation prioritaire* (priority education, EP) in France, is a “positive discrimination” policy aimed at providing the establishments in which the most disadvantaged populations are concentrated with greater resources (Merle, 2012). Within this framework, aimed to advance the “democratisation of education” and the level of education (Merle, 2009a; Duru-Bellat & Kieffer, 2008), the main objective is to improve the academic skills of disadvantaged pupils and to drive forward equal opportunities. However, looking beyond the evaluation of the impact of EP and the assessment of the success of pupils participating in the various EP schemes, there is a degree of conflict between the desire to focus efforts on disadvantaged populations and the objectives of increasing social diversity, as is reflected in recent debates concerning these policies.

Indeed, due to its diversified implementation at the local level and the numerous reforms it has undergone since its launch, the EP policy is a somewhat blurred object with characteristics that are difficult to define (Kherroubi & Rochex, 2002; 2004), yet it remains at the heart of the debates on education.¹ For example, the recent CNESCO (*Conseil National d'Évaluation Scolaire* – National Council for School System Evaluation) report in 2016 highlights the low level of success and, above all, the deficient resources actually made available for EP and, looking beyond a complete overhaul of the schemes, stresses the necessity of improving social diversity in the most segregated schools, i.e. those with the most disadvantaged populations. Although the report recommends that EP schemes should remain in place in the short term, it does suggest that this type of public policy is not ideal over the longer term. This criticism of the labelling of the scheme as EP without having adequate resources to accompany it forms part of a longer-standing debate as to whether there is a risk that “the ‘priority education’ label reinforces the stigma that it is supposed to combat” (Merle, 2012). This questioning of the merit of the principles behind the targeting of EP in recent debates can be viewed in the context of two points of public policy that are open to discussion: the low impact of the scheme in terms of the academic success of the populations that benefit from it² and, since the mid-2010s, the emphasis placed on the necessity of increasing social diversity in schools. On this second point, the report by Durand & Salles (2015) emphasises the inadequate concentration of priority education

resources on the most disadvantaged areas. This finding refers to the observation of Courtioux & Maury (2018), who show that, at national level, although EP is very heavily over-represented within the least diverse middle schools, some of the EP middle schools are among the top 50% most socially diverse. This points to a partial disconnect between the criteria for defining disadvantaged middle schools (particularly the proportion of disadvantaged pupils) and social diversity (i.e. the mix of pupils from all social categories:³ although they have a significant number of disadvantaged pupils, some EP middle schools also have large proportions of pupils from other social groups – intermediate, privileged and highly privileged). This article is also in keeping with the trade-off between two major educational policy tools: positive discrimination, where more resources are dedicated to the most disadvantaged secondary schools and social integration (homogeneous distribution of social profiles of pupils throughout the territory). Piketty (2004) highlights the interaction between these two concepts: a complete social integration policy would render any positive discrimination policy meaningless (since there would no longer be any disadvantaged areas to target). Here, we will pursue this logic by combining a positive discrimination (priority education) policy with levels of social segregation (within and outside of EP).

In a context in which some authors point to the benefits of social diversity when it comes to academic results (Trancart, 2012), it is important to consider the extent to which middle schools falling into the EP sector are homogeneous in terms of social diversity and which policies allow for a refocusing of EP support on middle schools with a large proportion of disadvantaged pupils *and* a very low degree of social diversity in order to rationalise the public policy driven by these two principles of action. From this point of view, Courtioux & Maury (2018) leave some grey areas: the findings that they present consider (in a simplified manner) priority education as a block, yet the definition and targeting of these policies have undergone changes over time, some of which have involved the overlay of different strata corresponding to different levels of state support. In addition, the

1. In particular Armand & Gilles (2006), Obin & Peyroux (2007), Cour des comptes (2018).

2. In particular Meuret (1994), Brizard (1995), Bénabou et al. (2004), Kherroubi & Rochex (2004), Caille (2001), Befly & Davezies (2013), Caille et al. (2016).

3. In this field, it is usual to differentiate between those who are “highly privileged”, “privileged”, “intermediate” and “disadvantaged” (see Box for a discussion of this).

social composition of the population of pupils as a whole has changed to include a higher proportion of highly privileged pupils. Not all middle schools have seen the same increase in the number of highly privileged pupils, which has ultimately resulted in a reduction of social diversity (Givord *et al.*, 2016; Courtioux & Maury, 2018; 2020) that is likely to have been compounded by the avoidance of “bad middle schools” by the most privileged social groups (Van Zanten & Obin, 2008; Monso *et al.*, 2018).

This article aims to shed light on the changes in the way in which EP is targeted and the impact of this on social diversity during the period from 2004 to 2016. It forms part of a body of French work on the subject of education (Ly & Riegert, 2015; Givord *et al.*, 2016; Courtioux & Maury, 2018; 2020), informed by the methodological debates on the calculation of segregation indices (Massey & Denton, 1988; Frankel & Volij, 2011). Our contribution consists of focusing specifically on EP: we present a diagnosis of its place in terms of social diversity. It is a question of identifying the extent to which the various reforms resulted in the EP label(s) being refocused on the most disadvantaged middle schools and which of two reforms the impact of such refocusing derives from: a drift towards greater or lesser diversity may be the result of a change in the proportion of the various social groups within the population as a whole, making it more or less simple to mix; the impact of the absorption of certain social groups by the other sectors (private and non-EP state); or other types of reform aimed at improving social diversity (such as a reform of the map of school catchment areas or the aggregated impact of various local initiatives). In this article, we are not seeking to identify the various factors behind this drift. Our aim is to verify whether the diagnosis of the trend of downgrading⁴ certain middle schools to EP, which was identified by Trancart (1998) during the last century, has continued beyond 2000, as has been suggested by a number of studies,⁵ and whether the major reforms of EP represent turning points in this trajectory.⁶

In the first section, we present the various EP schemes in France in order to test the hypothesis of a drift in the targeting. We then analyse the social composition of middle schools entering and leaving EP during the period in question, and we show that the refocusing on disadvantaged populations takes place at the very end of the period. In the second section, we seek to verify whether these overall trends are observed on a local scale or, conversely, whether there are differences within the scope of EP between the

establishments that have a significant proportion of disadvantaged pupils, but with a mix of diverse social origins, and other establishments that fully segregate these groups. We start by describing the methodology used and the principle of decomposing segregation. We then go on to verify that the refocusing of EP from 2015 onwards does indeed concern the most segregated middle schools. Next, we look at whether this trend is homogeneous across France or whether it is more specific to the population of certain regional education authorities. We end by analysing the geographical areas that are home to the populations in which the change in EP segregation has been observed.

1. Priority Education in France: Schemes and Targets

1.1. Priority Education Schemes Between 2004 and 2016

Between 2004 and 2016, no fewer than seven EP schemes were active, covering periods of between two and six years (Table 1): the *Zones d'éducation prioritaire* (ZEP), the *Réseaux d'éducation prioritaire* (priority education networks, REP, REP 2015 and REP+), the *Réseaux Ambition Réussite* (aim for success networks, RAR), the *Réseaux de Réussite Scolaire* (educational achievement networks, RRS) and the *Écoles, Collèges, Lycées pour l'Ambition, l'Innovation et la Réussite* (schools for ambition, innovation and success, ECLAIR) scheme.

Certain schemes, such as the ZEPs and REPs (first version), which were present at the beginning of the period, are in fact older. Indeed, the ZEPs were created in 1981 with the aim of using selective resources, grouped into priority education programmes, to strengthen educational activities in the areas in which the most socially disadvantaged people are concentrated. The objective was to combat inequality, particularly social inequality, in schools with the intention of addressing the desire to “increase the equality of opportunities offered to young people being educated in state establishments” (Radica, 1995). Each ZEP targeted areas with a high proportion of “disadvantaged”⁷ pupils. ZEPs were initially intended to be in place for

4. Merle (2012) uses the term *prolétarianisation* (*proletarianisation*) to describe this trend.

5. For example, Obin & Peyroux (2007), Merle (2010; 2012).

6. For example, Thauvel-Richard & Murat (2013) did not observe any change in the social profile of EP during the period from 2004 to 2011.

7. According to criteria associated with the socio-professional category, nationality or level of education of their parents, or even the education of the children.

Table 1 – Annual number and flows of middle schools entering and leaving priority education (EP)

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Types of EP scheme													
REP	991	1,016	1,011	797	792	739							
ZEP	109	94	95	63	61	84							
RAR				263	264	254	264						
RRS							826	805	783	778	778		
ECLAIR								297	310	309	310	11	11
REP 2015												742	730
REP+												352	364
Total secondary schools in EP	1,100	1,110	1,106	1,123	1,117	1,077	1,090	1,102	1,093	1,087	1,088	1,105	1,105
Status of secondary school with regard to EP													
Remaining in EP	-	1,096	1,105	1,100	1,116	1,074	1,031	1,064	1,077	1,083	1,086	898	1,103
Entering EP	-	14	1	23	1	3	59	19	16	4	2	207	2
Leaving EP	-	4	5	6	7	43	46	26	6	10	1	190	2
Total secondary schools	6,924	6,944	6,942	6,951	6,955	6,940	6,929	6,951	6,952	6,946	6,951	6,956	6,960

Notes: The bottom row indicates the total number of middle schools each year, including state and private establishments not enrolled in priority education.

Reading note: In 2004, there were 991 middle schools classified as REP and 109 as ZEP, i.e. a total of 1,100 in priority education from a total of 6,924 middle schools. 1,096 middle schools already in priority education in 2004 remained there in 2005. In 2005, 14 middle schools (new or not in priority education in 2004) entered priority education. That same year, 4 middle schools (enrolled in priority education in 2004) left.

Sources: DEPP, BCS 2004-2016, authors' calculations.

just four years; however, additional ZEPs were eventually established and the ZEP map underwent several revisions (Bénabou *et al.*, 2004; Radica, 1995). The 1997 revision of the ZEP map was accompanied by the creation of REPs. This constituted an extension of the scheme that provided specific assistance to establishments already listed as ZEPs, giving rise to the drawing up of a success contract.

The other EP schemes were launched during the period under analysis. In 2006, a new plan was agreed for the relaunch of EP with the establishment of RARs. These schemes are provided with additional resources (particularly in terms of pedagogical assistance), improved monitoring and management at national level, with the remaining ZEPs and REPs becoming RRSs. The ECLAIR scheme was subsequently launched in 2011; it had been “tested” by through the experimental CLAIR (*Collège Ambition Innovation Réussite* – school ambition, innovation and success) programme the previous year, replaced the RARs with the aim of increasing the autonomy of local stakeholders, establishments and networks to encourage the emergence of innovative methods. In 2014, the geography of priority education was revised once again. The former ECLAIR and RRS schemes disappeared and two new schemes were created: REP⁸ and REP+, which have different levels of intervention in order to ensure that resources are allocated in proportion to the social and educational difficulties encountered (REP+, in which more resources are concentrated, concerns

the most disadvantaged neighbourhoods). In addition, this geographical renovation was accompanied by a set of pedagogical measures: the establishment of a pedagogical reference framework for effective teacher practices and the creation of a pedagogical innovation fund. The medical and social assistance teams were also strengthened.

The data that we use (Box) allows us to calculate the change in the number of EP middle schools according to the scheme in place.⁹ As can be seen in Table 1, the number of EP middle schools remained relatively stable between 2004 and 2016 with around 1,100 establishments, which represents 16% of all state and private middle schools. Within EP, REP middle schools were dominant until 2009, although some of these were replaced by RAR in 2007 (the number of REP middle schools fell from 1,011 to 797, while 263 secondary schools were newly classified as RAR). In our database, the RRS middle schools appear in 2010, the year that the REP (old version) and ZEP middle schools finally disappeared. In 2011, the ECLAIR scheme replaced the RARs. This scheme involved 297 middle schools in 2011 and as many as 310

8. In the remainder of this article, we will refer to these schemes as REP 2015 to allow them to be distinguished from the former REP schemes, which disappeared in 2010.

9. It should be noted that there may be some discrepancies between the official years of creation/disappearance of certain schemes (RAR, RRS, ECLAIR) and their appearance/disappearance in the BCS. According to the explanations provided by the DEPP, this is due in particular to the “safeguarding” clauses, which allow some establishments no longer covered by EP to continue to benefit from the allowances for a certain period of time.

Box – Data

We use data covering the period 2004-2016 from the *Base Centrale Scolarité*^(a) (central education databases, BCS), a comprehensive administrative database for metropolitan France and some overseas departments (Guadeloupe, Martinique, French Guiana, Réunion). It includes a pupils file and an establishments file.

The establishments file contains the administrative and geographical characteristics of all secondary schools in France, in particular the sector (state/private), whether they belong to an EP scheme and their location. As regards EP, we know the precise nature of the scheme for each establishment (ZEP, RAR, REP, REP 2015 and REP+, RRS, ECLAIR scheme). An establishment identification number is available that remains the same for all years of observation, which allows us to identify establishments entering and leaving the EP schemes.^(b)

The pupils file provides the socio-demographic characteristics of each individual in the total population of students in secondary education: gender, nationality, social origin and department of residence, together with information regarding their education (studies followed, foreign languages studied, etc.). An establishment identifier can be used to link the establishments files with the pupils files. By way of example, for 2004, we have individual information relating to 3,252,380 pupils spread across 6,924 secondary schools. However, unlike the establishments file, the identification number of a certain pupil changes from year to year: it is therefore not possible for us to reconstruct the academic progression of individuals.

From the variables available, we use the social origin of the pupil's guardian to reconstruct the classification of socio-professional categories used by the *Direction de l'évaluation, de la prospective et de la performance* (DEPP, the statistical and evaluation department of the Ministry of Education):^(c) pupils are divided into four social groups: "highly privileged", "privileged", "intermediate" and "disadvantaged". This variable is obviously not precise enough to take account of the many social difficulties encountered by disadvantaged pupils, or even more generally for their relationship with school. On the question of immigration, for example, the educational trajectories of the children of immigrants vary significantly depending on the geographical origin of their parents, all else being equal (Brinbaum & Kiefer, 2009); however, the differences in geographical origin for a given social origin also point to very different relationships with school (Ichou & Oberti, 2014). Contrary to a number of studies (Brinbaum & Kiefer, 2009; Ichou & Oberti, 2014; Courtioux, 2016), our aim here is not to discuss the relevance of the categorisation of social background according to the DEPP, or to amend it in view, for example, of what is known about the link between social background and educational success. We consider this definition to be institutional data, i.e. a categorisation of social origin allowing for the operationalisation of public policies aiming to promote social diversity.^(d)

^(a) 2004 et 2005 DEP, 2006-2016 DEPP, Ministry of Education [producer]-ADISP-CMH [distributor]

^(b) Since we only have the establishment identifier, it is not possible for us to specifically identify openings, closures and merging of establishments.

^(c) Cf. in particular Durand & Salles (2015), appendix 2, p.220.

^(d) Nevertheless, in order to discuss the robustness of our results, we have also tested an alternative social categorisation, drawing inspiration from that proposed by Courtioux (2016) on the basis of academic results on starting the first year of secondary school (see Appendix, Table A-2).

in 2014. Finally, in 2015, the REP 2015 (not to be confused with the REPs present until 2009) and the REP+ appeared. The establishment of this new scheme brought about a slight increase in the number of EP schools in 2015.

In spite of the large number of schemes that have been introduced since 2004, the number of establishments entering and leaving EP has often remained relatively small. Therefore, prior to 2009, the number of middle schools joining or leaving EP remained very low (cf. Table 1). In terms of entries, the only year that saw a significant influx of new middle schools into priority education was 2007 following the creation of RARs. The period from 2009 to 2011 (which saw the disappearance of the REPs and ZEPs, the experimental CLAIR scheme and the introduction of the ECLAIR scheme) is more active in terms of flows. The period from 2011 to 2014 marks a return to stability with few entries and exits.

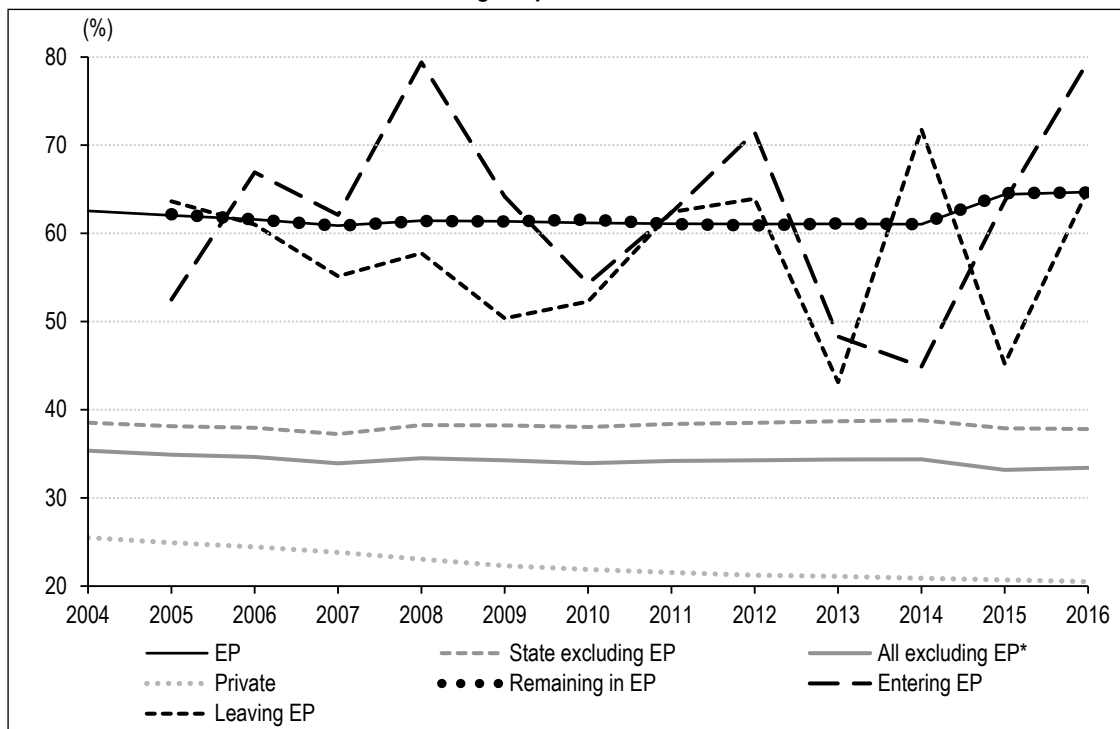
However, within this period, 2015 was an exceptional year. Indeed, the geography of

priority education was revised following the introduction of the law of 8 July 2013 on the restructuring of schools. The former ECLAIR and RRS schemes disappeared and two new schemes were created: REP 2015 and REP+, which were aimed at the middle schools experiencing the greatest social and educational difficulties, which implicitly acknowledged that the scope of EP had gradually drifted away from the most disadvantaged areas. The introduction of the REP 2015 and REP+ has brought about a very significant revision of the scope of EP: 190 middle schools left EP, while 207 middle schools that did not previously fall under EP were newly classified as REP 2015 or REP+.

1.2. The Changes Made to Priority Education Do Not Systematically Target the Disadvantaged

In 2004, the proportion of disadvantaged pupils in EP middle schools was in excess of 62% compared with a little under 39% in the non-EP state sector and around 25% in the private

Figure I – Proportion of pupils from disadvantaged social backgrounds according to the sector that their middle school belongs to and its situation with regard to priority education during the period 2004-2016



Notes: EP stands for priority education (*éducation prioritaire*); (*) includes non-EP state and private secondary schools.
 Reading note: In 2005, among the middle schools that had recently entered EP (i.e. those that were non-EP in 2004 or had just been established), the proportion of pupils from disadvantaged social backgrounds was 52.5%. Among the middle schools that were in EP in 2004 and that left in 2005 (or that no longer existed), this proportion was 63.6% in 2004.
 Sources: DEPP, BCS 2004-2016, authors' calculations.

sector (Figure I). Highly privileged pupils only make up a little over 6% of pupils at EP middle schools, compared with around 19% in the non-EP state sector and almost 30% in the private sector (cf. Appendix, Table A-1).

The distribution of EP students by social origin has changed slightly since 2004. In 2016, the proportion of disadvantaged pupils was a little over 64%, two points higher than in 2004. The proportion of highly privileged pupils has remained at around 6%, whereas it has increased by more than two points in the non-EP state sector (reaching more than 21%) and, in particular, by more than seven points (reaching more than 36%) in the private sector. Over the same period, the share of disadvantaged pupils fell outside of EP, particularly in the private sector. However, the refocusing of EP on disadvantaged pupils took place at the end of the period, following the reform in 2015. Indeed, in 2014, the proportion of disadvantaged pupils in EP was around 1.5 percentage points lower than that seen in 2004. The changes seen here are similar to those highlighted up until 2013 by Stéfano (2015). Our findings from the period between 2007 and 2012 can also be compared with those of Stéfano (2017), who shows that

the proportion of disadvantaged pupils who have spent four years in RARs was 68.6%, compared with just 52.9% in RRSs and 31.6% outside of EP. This discrepancy when compared with our findings is undoubtedly down to the fact that the author was only working with a panel of students who started their first year of middle school in 2007.

Assuming the effective adaptation of EP targeting to the most disadvantaged pupils, it is to be expected, first of all, that the proportion of disadvantaged pupils would be much higher in the middle schools entering EP than in those that are leaving EP (cf. Figure I), which is generally the case, although this is not always verified. Such cases of “deficient” targeting point, first of all, to marginal effects with little impact at the aggregated level, as is the case for 2014 (where only three middle schools changed their status with respect to EP, cf. Table 1) and, to a lesser extent, for 2005 (when only four middle schools left EP). However, this also applies to 2011, where the number of middle schools changing their status was much larger, but where the differences in the number of middle schools entering and leaving were much smaller.

Exclusionary effects of targeting are also to be expected: the middle schools leaving EP are those that have seen their proportion of disadvantaged pupils decrease and have therefore returned to a more “normal” situation that no longer justifies additional resources. Again, Figure I shows that the exclusion effect was indeed significant in 2015 (a difference of 19 percentage points between middle schools leaving and those remaining in EP),¹⁰ and was also seen, albeit to a lesser extent (both in terms of the number of middle schools excluded from EP and the differences in terms of the share of disadvantaged pupils) in 2009 and 2013. The lack of a significant exclusion effect in the other years can be explained by the small number of middle schools leaving EP.¹¹ However, during 2011, which was characterised by the establishment of the ECLAIR scheme and the exit of 26 middle schools from EP, the middle schools that were excluded had a more disadvantaged population than those that remained in EP. The phenomenon of exclusion from EP for middle schools that have relatively few disadvantaged pupils was therefore not systematic during this period either.

The targeting can also be expected to produce recovery effects: the labels applied aim to integrate the most disadvantaged middle schools, or those that have become disadvantaged, into EP. In that regard, it can be expected that the proportion of disadvantaged pupils within those middle schools entering will be higher than that seen in the others. Once again, this effect is far from systematic. For example, in 2010, the year in which the RRSs were put in place, the proportion of disadvantaged pupils within the 59 middle schools that entered was around seven percentage points lower than that of the middle schools already in EP; the same is true of the 207 middle schools that entered in 2015, in which the proportion of disadvantaged pupils was slightly lower, but very close to that of the middle schools already in EP.

1.3. A Downward Trend in the Proportion of Disadvantaged Pupils and a Very Recent Refocusing on Those Pupils

The trend towards an increase in the proportion of disadvantaged pupils in EP establishments during the last century has led some authors to speak of the “downgrading” or even the “proletarianisation” of these establishments (Trancart, 1998; Merle, 2012). As regards the period studied here, between 2005 and 2014, a slight decrease is observed in the proportion of disadvantaged pupils in establishments that

remained in EP from one year to the next. It fell from 62.2% in 2005 to just 61% in 2014 (cf. Figure I). Although the change in this relative proportion is small, it contrasts with what has been observed in middle schools that remain outside of EP, which saw little change in their proportion of disadvantaged pupils over that same period. At the same time, the proportion of highly privileged pupils increased within EP (from 6.5% to 7.6%), at proportions similar to those observed outside of EP (from 22% to 24.5%, see Appendix, Table A-1).

This slight decrease in the proportion of disadvantaged pupils in EP secondary schools is not just observed during periods of stability of the priority education schemes (2005-2007 and 2011-2014), but also during periods where these have been modified. As a result, in 2011, the year in which the ECLAIR scheme was established, the proportion of disadvantaged pupils in middle schools remaining within EP was 61.1% (compared with 61.6% in 2010), while the share of highly privileged pupils was 7.1% (compared with 7.3%). There are two possible factors at play here: the change in the social composition of EP middle schools in 2010 and 2011 (which would therefore have inducted slightly fewer disadvantaged pupils in 2011 than in 2010), coupled with the fact that the middle schools that left priority education in 2011 were not the most affluent (62.4% disadvantaged pupils, a larger proportion than is seen among the middle schools remaining in EP). It is true that the secondary schools that newly entered into EP in 2011 had a proportion of disadvantaged pupils that was below that of the existing EP secondary schools, but this did not result in a significant refocusing of EP middle schools on the most disadvantaged the following year: in 2012, the share of disadvantaged pupils within the middle schools remaining in EP was 60.9% (compared with 61.1% in 2011). Based on these observations, we can conclude that the ECLAIR scheme did not contribute to the refocusing of

10. Figure I shows all of the establishments that entered EP (either non-EP state middle schools or newly created secondary schools) and all those leaving EP (those rejoining the non-EP state secondary schools or those that closed). In order to supplement these findings, we have reproduced in Table A-1 in the Appendix, the changes in social composition by focusing solely on the non-EP state middle schools moving into EP (discounting newly created establishments, which only represent a very small fraction of the middle schools entering EP) and those leaving EP to join the non-EP state middle schools (discounting the establishments that have closed, which only represent a small fraction of the middle schools leaving EP). The results are similar to those in Figure I, particularly for 2015.

11. For example, for the years 2005, 2012, 2014 and 2016.

priority education on the most disadvantaged populations.¹²

This observation regarding the effects of the targeting of the ECLAIR scheme can be repeated for other years during the period leading up to the reform in 2011, which were characterised by large flows of middle schools entering and leaving EP. As a result, we observe that, in 2010, it was indeed the relatively privileged establishments that left priority education (only 52.3% disadvantaged pupils and more than 11% highly privileged pupils); however, at the same time, the establishments entering priority education were also relatively privileged (54.3% disadvantaged pupils and more than 9% highly privileged pupils). This new targeting of the EP scheme therefore did not refocus the scheme on disadvantaged populations.

The picture is slightly different for the years 2007 and 2009, which were also marked by significant flows (increase in the number of entries into EP in 2007 and the number of exits in 2009). In 2007, it was the relatively disadvantaged middle schools that entered into EP (RARs), whereas in 2009, the middle schools that left EP were relatively privileged. This should have contributed to an increase in the proportion of disadvantaged pupils in priority education. However, this is not clear from the data for either 2007 or 2009.¹³ Indeed, the impact of the changes to the EP scheme was reduced or even cancelled out completely by the changes in the social composition of the establishments remaining in EP. It therefore does appear that, during those years, a slight decrease was seen in the share of disadvantaged pupils in the EP sector on a like-for-like basis. The same observation can be extended across almost the entire period from 2004-2014, including the years in which no notable reform took place: on average, the social composition of EP middle schools grew closer to that of other middle schools. The middle schools that remained in EP saw their proportion of disadvantaged pupils fall slightly (and the proportion of highly privileged pupils increase) almost every year. This could be down to the fact that the population residing in the EP sector (on a like-for-like basis) has changed and that the proportion of disadvantaged pupils is decreasing while that of the more privileged pupils is increasing (bearing in mind that these are the national trends presented in the previous section). This is also potentially linked to the nature of the requests for exemption: a possible reduction in requests for exemption from EP from wealthy families or an increase in exemptions received from the poorest families.¹⁴

It therefore appears that, far from an (absolute or relative) impoverishment of the EP sector, the proportion of disadvantaged pupils in the sector has actually decreased slightly, while the number of pupils from wealthy backgrounds increased up until 2014. In this respect, the sector has experienced trends comparable to those seen in other secondary schools, whether they be non-EP state middle schools or private secondary schools. As regards the proportion of disadvantaged pupils, it could even be argued that the fall is slightly more marked within EP (fall of almost 1.5 percentage points between 2004 and 2014) than in non-EP state and private middle schools combined (fall of around one percentage point). Assuming that wealthy families are the most likely to request an exemption, this could suggest that some of them have gradually decided not to do so (or that they have been unable to find a place elsewhere, since the proportion of highly privileged pupils is increasing everywhere). This trend has not been curbed by the various redistributions of EP that took place during this period. The RAR and ECLAIR schemes therefore do not represent a refocusing on disadvantaged populations, whose proportion continued to decline in 2007 and 2011.

Conversely, the introduction of the REP (and REP+) in 2015 had a significant impact on the social composition of the priority education middle schools: among the middle schools already enrolled in EP, the proportion of pupils from poor backgrounds increased by more than three percentage points between 2014 and 2015 (from 61% to 64.6%), while that of the most privileged pupils fell by more than 1.5 percentage points (from 7.6% to 6.1%). This is directly linked to the flows into and out of EP. The proportion of disadvantaged pupils within the establishments that left EP in 2015 was just 45.2% (only slightly higher than that seen in all non-EP state middle schools, cf. Figure I). Likewise, the proportion of highly privileged pupils within those schools was much higher than in the rest of EP (14.8%). The establishments that joined the new REP 2015 schemes

12. This is not especially surprising: the establishment of the CLAIR programme was more closely linked to issues surrounding the educational climate than questions regarding the social origin of pupils.

13. It should be noted, however, that the impact of the entry of relatively disadvantaged establishments in 2007 was felt by the stock of existing middle schools in 2008 via an increase in the proportion of disadvantaged pupils (61.4%, compared with 60.9% in 2007).

14. Fack & Grenet (2013) point to an increase in requests for exemptions and a fall in numbers in EP in 2007 following the relaxation of the map of school catchment areas. However, Thauriel-Richard & Murat (2013) show that this was not accompanied by any significant change to the social profile of EP secondary schools.

were much more oriented towards poorer profiles (63.7% disadvantaged pupils and 7% highly privileged pupils). The REP 2015 reform is therefore the first since 2004 to have resulted in a true refocusing of the scheme on poorer populations.

2. Analysis and Decomposition of Social Segregation

2.1. Methodology Used To Calculate and Decompose Segregation

The extensive literature on segregation indices has led to the creation of more than twenty indices (Massey & Denton, 1988). The study by Frankel & Volij (2011) proposes a complete axiomatisation of the properties of these various indices. According to these authors, the mutual information index M is one of the few that verify the ability to perform a (strong) additive breakdown by unit. Given the breakdowns by sector (EP vs. non-EP) that we are led to perform in the article, this property is crucial here and we have therefore chosen to work with M .

N represents the size of the population, i.e. the total number of pupils in the French middle schools surveyed. This population is divided into geographical units K (i.e. secondary schools), where N^k is the number of pupils within the middle school k ($k = 1, \dots, K$). G is the number of groups, i.e. social categories. In this case, $G = 4$ (disadvantaged, intermediate, privileged, highly privileged). The total number of pupils belonging to group g is N_g ($g = 1, \dots, G$). N_g^k is the number of pupils in group g in middle school k .

p_g is the proportion of pupils belonging to group g within the total population, i.e. $p_g = N_g/N$. $p^k = N^k/N$ is the proportion of pupils at middle school k within the total population. $p_g^k = N_g^k/N^k$ is the proportion of pupils from group g within middle school k . P is the distribution of the various groups in the population, $P = (p_1, p_2, p_3, p_4)$ and P^k is the distribution of those groups within middle school k , $P^k = (p_1^k, p_2^k, p_3^k, p_4^k)$.

The M index is defined as follows:

$$M = h(P) - \sum_{k=1}^K p^k h(P^k) \quad (1)$$

where $h(P)$ is the entropy of the distribution P :

$$h(P) = \sum_{g=1}^4 p_g \ln \left(\frac{1}{p_g} \right) \quad (2)$$

M equals zero when the distribution of groups within each of the middle schools is consistent with the national distribution ($P^k = P$ and therefore $h(P^k) = h(P)$ regardless of k). In this case,

we have $M = 0$. With maximum segregation, i.e. when each middle school specialises in a given group, this gives $h(P^k) = 0$ regardless of k and therefore $M = h(P)$. The M index values are therefore between 0 and $h(P)$. It is therefore not standardised and, unlike other segregation indices, is not expressed as a percentage (Frankel & Volij, 2011).

The mutual information index is therefore based on a comparison of the various individual situations (social composition of each secondary school) with the national situation. It summarises this information as a single number between 0 – absolute homogeneity, all secondary schools are identical – and $h(P)$ – maximum heterogeneity. It provides more information than a simple analysis of the changes in the proportions of each group. Indeed, the latter provides aggregated information (averages) and does not allow for the heterogeneity of local situations to be simply judged in relation to the national average.

In addition, among other desirable properties for an index (scale invariance, school division property, composition invariance, group division property, cf. Frankel & Volij, 2011), the mutual information index also allows breakdowns to be performed (between sectors vs. within sectors). Therefore, if X and Y are two sectors (the priority education sector and a sector comprising all other secondary schools, for example), this gives

$$M(X \cup Y) = M(c(X) \cup c(Y)) + \frac{N^X}{N^X + N^Y} M(X) + \frac{N^Y}{N^X + N^Y} M(Y) \quad (3)$$

where $X \cup Y$ is the combination of these two sectors (all middle schools, EP and non-EP combined) and $c(X)$ (or $c(Y)$) is the fictitious middle school resulting from the combination of all EP (or non-EP) middle schools. In this heavy version of the breakdown, the intra and inter-sector components are *a priori* independent. $M(c(X) \cup c(Y))$ is the inter-sectoral component. Relative to $M(X \cup Y)$, it measures the contribution of the differences between sectors (i.e. between EP and non-EP) to the total observed segregation. This measure will be used extensively in the remainder of the article. $M(X)$ and $M(Y)$ are the intra-sectoral components: they measure the segregation within each of the two sectors (EP and non-EP separately).

Regardless of the geographical level considered, we measure the contribution of the different sectors to social segregation, together with the contribution of the inter-sectoral differences. As we do not focus on the differences between state

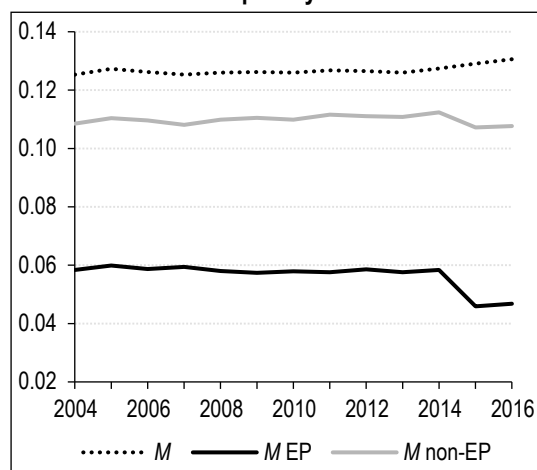
and private middle schools in this article,¹⁵ we group together state and private non-EP schools and concentrate on the social gaps between EP and non-EP. Finally, in some cases, we focus on the state sector alone and measure the contribution of the differences between EP and non-EP state middle schools to social segregation, ignoring the private sector.

Note that we use the term ‘social diversity’ in the following as the opposite of social segregation. In the literature, social diversity sometimes refers to the cohabitation of diverse populations (privileged and disadvantaged) within the same establishments, while in other cases it refers to the differences in the social composition between middle schools. It is this second meaning that we are adopting here for the remainder of the article.

2.2. The 2015 Reform Resulted in the Focus Being Shifted Back to the Most Segregated Middle Schools

Based on the above descriptive statistics, our study period can be separated into two parts (Figure II). Between 2004 and 2014, the *M* index remained relatively stable (between 0.1253 and 0.1274). There was therefore little variation

Figure II – Changes in segregation at national level and within priority education



Reading note: EP stands for priority education (*éducation prioritaire*); *M* is the mutual information index; it is 0.1253 for 2004. Sources: DEPP, BCS 2004-2016, authors' calculations.

in the levels of social segregation during this period. This finding has already been established in the literature (Givord *et al.*, 2016). At the same time, the proportion of this social segregation that is brought about by differences between the three sectors (EP, non-EP state and private) is increasing very steadily (Table 2); again, this is a finding that has already been highlighted by Givord *et al.* (2016) with just two sectors – state and private – and Courtioux (2016), with three sectors. The differences in terms of social composition between the three sectors have therefore increased steadily:¹⁶ private schools are educating more and more highly privileged pupils and fewer and fewer disadvantaged pupils. However, if we focus solely on the differences between EP and non-EP (i.e. by grouping together non-EP state and private secondary schools), they were tending to narrow up until 2014. The social composition of EP middle schools has therefore become closer to that of other middle schools, especially those run by the state. This effect was particularly marked in 2011, the year in which the introduction of the ECLAIR scheme helped to integrate some of the “less disadvantaged” middle schools into priority education. Differences between EP and non-EP middle schools narrowed and the degree of segregation resulting from social differences between EP and non-EP fell from 19.2% to 18.6%. This narrowing of the gap between EP and non-EP is also observed during years in which the scope was not changed or changed very little (particularly before 2007 or, to a lesser extent, between 2011 and 2014).

There have been a number of changes since 2015. First, social segregation is increasing: *M* rose from 0.1274 in 2014 to 0.1306 in 2016. More importantly, the share of this segregation that corresponds to the differences between

15. See Courtioux & Maury (2018) for a detailed analysis of the contribution of the differences between the state and private sector to social segregation.

16. Cf. Figure I and Table A-1 in the Appendix. Similar findings are also made where a segregation index is used that focuses on the disadvantaged pupils alone: we performed this breakdown for an exposure index standardised to the highly disadvantaged (see Frankel & Volij, 2011, for example, for a description) for the various years being analysed here. The results are available from the authors on request.

Table 2 – Change in the proportion of segregation resulting from differences in social composition between middle schools in priority education and those in other sectors

Years	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Proportion (as a %) of <i>M</i> explained by differences in composition between...													
...the 3 sectors (EP, non-EP state, private)	26.2	26.1	26.6	27.1	27.5	28.1	28.6	28.7	29.4	29.9	30.1	35.8	36.4
...EP/non-EP	20.3	20.1	20.0	20.2	19.5	19.0	19.2	18.6	18.7	18.7	18.5	24.9	25.2

Reading note: EP stands for priority education (*éducation prioritaire*); *M* is the mutual information index; 20.3% of the level of *M* (cf. Figure II) can be explained by differences in social composition between pupils in EP and those not in EP. Sources: DEPP, BCS 2004-2016, authors' calculations.

sectors leapt up in 2015 (35.8% compared with 30.1% in 2014). This phenomenon is the result of the refocusing of EP that took place during that year with the introduction of the REP 2015 and REP+. Following that refocusing, as mentioned in the previous section, the proportion of disadvantaged pupils increased in EP and some middle schools that were enrolled in the former ECLAIR scheme left EP. As a result, the social differences between EP and non-EP middle schools increased significantly, which explains their increased contribution to social segregation.¹⁷

The level of the M index depends on three components (see above): the term measuring inter-sectoral differences ($M(c(X) \cup c(Y))$) that we have just analysed, but also the levels of segregation within each sector. Here, we analyse the levels of segregation within EP and non-EP secondary schools.

Within EP middle schools, the levels of segregation have been low since 2004, and they remained stable between 2004 and 2014. The arrival of new, highly privileged, pupils within EP has not contributed to any significant increase in segregation, which seems to suggest that, during this period, these pupils were spread fairly evenly across the EP middle schools in the area. The EP middle schools are therefore relatively homogeneous: almost all of them have large numbers of pupils from disadvantaged backgrounds.

The introduction of REP and REP+ in 2015 further accentuated the phenomenon of homogenisation, resulting in a reduction of segregation within EP (from 0.0584 in 2014 to 0.0459). At the same time, having brought together the most disadvantaged middle schools within the REP 2015 also helped to increase the homogeneity of non-EP middle schools. The levels of segregation outside of EP had risen to 0.1124 in 2014 before falling back down to 0.1072 in 2015. Throughout the entire period from 2004 to 2016, segregation outside of EP fell slightly. This is all the more remarkable¹⁸ given that the set of non-EP middle schools is, by its very nature, disparate, since it includes state middle schools and private secondary schools, and other studies have shown that the private sector is becoming increasingly heterogeneous (see Givord *et al.*, 2016; Courtioux & Maury, 2018).

In summary, at the national level, our results show that the differences between EP and other middle schools, which were on a downward trend prior to 2015, increased as a result of the

REP 2015 reform, while the differences within each of the groups of middle schools reduced significantly during that same year.¹⁹

There are, in theory, two possible explanations for the changes in segregation within EP since 2004 and, in particular, the break observed in 2015. They may result from the various shifts in focus of EP (effects of middle schools entering and leaving EP) or could also be due to changes in the population of EP secondary schools on a like-for-like basis (with a possible crowding-out effect, as suggested by Davezies & Garrouste, 2020). Without claiming to give a definitive answer to this question in the absence of a causal analysis, we nevertheless see a change in the composition of the establishments remaining within EP throughout the entire period between 2004 and 2016. This concerns 803 middle schools. The results show that the social composition of these middle schools has developed in parallel with that observed previously for all middle schools between 2004 and 2014, with a fall in the number of disadvantaged pupils (see Appendix, Table A-1). This fall is slightly less pronounced within the middle schools remaining within EP than it is when we look at middle schools as a whole, which suggests that the process of middle schools entering and leaving EP has contributed to bringing the priority education sector closer to other (non-EP) secondary schools in terms of their social composition. In 2015, we observe little change: the proportion of disadvantaged pupils rose from 64.5% to 64.8%. These results therefore suggest that it is primarily the entry and exit of establishments following the various shifts in the focus of EP that impact upon the dynamics of segregation between EP and non-EP and within EP, more so than a change in the composition of the populations or an eviction effect.

Finally, at this stage, we have considered EP as a whole without making any distinction between its various levels. However, disparities may have emerged within priority education since 2004. In Table 3, among the middle schools enrolled in priority education, we distinguish the reinforced

17. The results in Table 3 have been reproduced excluding the private sector and therefore comparing EP secondary schools with non-EP state middle schools. These additional analyses, which are available from the authors, confirm the robustness of the findings obtained when the private sector is included.

18. For all practical purposes, we checked for differences in the proportion of disadvantaged pupils among pupils in EP between 2014 and 2015. The test concluded that there was a significant difference (see Appendix, Table A-3).

19. It should be noted that these findings remain robust when faced with a change in the composition of the social categories that are more in line with the average findings upon starting the first year of middle school (cf. Box and the results shown in Appendix, Table A-2).

Table 3 – Changes in segregation within middle schools in priority education at national level

Type of index/years	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
<i>M</i> EP	0.0594	0.0580	0.0574	0.0579	0.0576	0.0586	0.0576	0.0584	0.0459	0.0468
<i>M</i> RAR	0.0140	0.0132	0.0126	0.0119						
<i>M</i> ECLAIR					0.0125	0.0129	0.0125	0.0124		
<i>M</i> REP+									0.0089	0.0103
Proportion (as a %) of <i>M</i> explained by differences in composition within EP between...										
...RAR/non-RAR (%)	23.6	22.7	22.0	20.6						
...ECLAIR/non-ECLAIR (%)					21.8	22.1	21.8	21.2		
...REP+/non-REP+ (%)									19.3	21.9

Reading note: EP stands for priority education (*éducation prioritaire*); *M* is the mutual information index; it is 0.0594 for priority education in 2007, 23.6% of which can be explained by differences in social composition between pupils in RAR and the other pupils in EP. Sources: DEPP, BCS 2004-2016, authors' calculations.

schemes from the rest of priority education (RAR vs. non-RAR from 2007 onwards, ECLAIR vs. non-ECLAIR from 2011 onwards and REP+ vs. REP from 2015 onwards) and measure the levels of segregation resulting from inter-sectoral differences within EP. The findings do not reveal any increase in these differences (with the exception, perhaps, of 2016). The heterogeneity within priority education appears to be relatively stable, which validates our decision to consider EP as a whole in the remainder of this article.

2.3. Refocusing Primarily Concerns the Most Urbanised Regional Education Authorities

The above findings show overall trends for the country as a whole, which may mask geographical disparities. We therefore reduce our geographical scale and calculate levels of social segregation: 1) for each regional education authority, 2) based on the size of the urban unit, 3) based on the type of municipality in which the middle school is located (city centre, suburbs, isolated town, rural area). Table 4 shows, for each regional education authority, the overall levels of social segregation, those within each sector (EP and non-EP) and the proportion of segregation resulting from the differences between the sectors for the years 2004, 2014 and 2016, during which there were breaks in the trend (see above).²⁰

In 2004, very strong disparities can be seen in the levels of social segregation from one regional education authority to the next: *M* is very high in the regional education authorities within the Paris region (0.1845 in the Paris regional education authority, 0.1392 in the Créteil regional education authority and 0.1653 in the Versailles regional education authority) as well as in some other regional education authorities covering large urban areas (0.1341 in Aix-Marseille and 0.1167 in Lyon). Conversely, other regional education authorities, particularly those that are not located in large urban areas,

have significantly lower levels of segregation (0.0601 in Besançon, 0.0624 in Limoges and 0.0679 in Poitiers). Levels of segregation therefore vary threefold between Paris and certain far less urbanised regional education authorities.

Between 2004 and 2014, it is interesting to note that the relative stability at national level actually masks contrasting developments from one regional education authority to another: a significant drop in segregation in Paris and in the Créteil regional education authority, but a notable increase in the Versailles regional education authority and in Lyon. In regional education authorities covering smaller urban areas, the trends between 2004 and 2014 are again very heterogeneous. Levels of segregation increased significantly in Nice (and to a lesser extent in Toulouse and Bordeaux), while they decreased in some regional education authorities, particularly those where levels were initially low (such as Besançon and Limoges). These findings do not suggest any trend towards regional convergence (or divergence) of segregation levels.

Between 2014 and 2016, the increase in segregation observed at national level was driven by a large majority of regional education authorities (Aix-Marseille, Lyon, Créteil, Versailles, as well as numerous small regional education authorities), with the exception of Paris, where the decline observed prior to 2014 continued. This demonstrates the special position held by the capital: there, the challenges in terms of social segregation are very different from the rest of the country.

If we now focus on levels of segregation within just those middle schools enrolled in EP, once again, we see significant heterogeneity in the dynamics from one regional education

20. The results for all years between 2004 and 2016 are available from the authors.

Table 4 – Segregation index and its breakdown between priority education (EP) and non-priority education (non-EP) at various geographical levels

Level of geographical breakdown	M global			M EP			M non-EP			Difference EP / non-EP (in %)		
	2004	2014	2016	2004	2014	2016	2004	2014	2016	2004	2014	2016
Regional education authority												
PARIS	0.1845	0.1749	0.1696	0.0487	0.0835	0.0358	0.1380	0.1408	0.1247	33.74	25.09	34.01
AIX-MARSEILLE	0.1342	0.1346	0.1406	0.0803	0.0707	0.0526	0.0798	0.0893	0.0906	40.44	37.94	42.47
BESANCON	0.0601	0.0556	0.0569	0.0317	0.0265	0.0305	0.0512	0.0462	0.0467	21.18	21.23	22.06
BORDEAUX	0.0820	0.0838	0.0895	0.0343	0.0359	0.0199	0.0768	0.0803	0.0832	12.53	10.60	14.20
CAEN	0.0797	0.0786	0.0808	0.0314	0.0369	0.0291	0.0749	0.0742	0.0756	10.08	8.23	10.00
CLERMONT-FERRAND	0.0760	0.0698	0.0714	0.0391	0.0341	0.0347	0.0750	0.0639	0.0654	9.20	11.91	11.61
DIJON	0.0716	0.0643	0.0646	0.0359	0.0311	0.0191	0.0641	0.0603	0.0589	17.57	13.19	16.72
GRENOBLE	0.0753	0.0687	0.0723	0.0318	0.0217	0.0183	0.0674	0.0600	0.0624	16.80	18.33	19.45
LILLE	0.1355	0.1374	0.1387	0.0262	0.0311	0.0271	0.1189	0.1223	0.1194	27.97	25.47	30.13
LYON	0.1167	0.1272	0.1289	0.0539	0.0548	0.0362	0.0941	0.1079	0.0994	25.15	21.59	29.79
MONTPELLIER	0.0892	0.0926	0.0950	0.0542	0.0671	0.0408	0.0704	0.0753	0.0713	23.34	19.63	28.90
NANCY-METZ	0.0986	0.0859	0.0917	0.0496	0.0387	0.0323	0.0897	0.0790	0.0799	14.49	13.48	19.59
POITIERS	0.0679	0.0657	0.0704	0.0564	0.0474	0.0529	0.0636	0.0612	0.0639	7.12	8.31	10.38
RENNES	0.0710	0.0804	0.0804	0.0241	0.0342	0.0233	0.0684	0.0763	0.0748	6.49	7.25	9.28
STRASBOURG	0.0930	0.0937	0.1008	0.0427	0.0289	0.0254	0.0742	0.0708	0.0748	24.16	29.80	32.19
TOULOUSE	0.0845	0.0901	0.0927	0.0713	0.0508	0.0410	0.0742	0.0824	0.0843	12.48	11.12	12.06
NANTES	0.0851	0.0893	0.0923	0.0507	0.0459	0.0308	0.0806	0.0838	0.0842	7.60	8.48	12.02
ORLEANS-TOURS	0.0864	0.0804	0.0796	0.0442	0.0362	0.0308	0.0712	0.0719	0.0699	21.79	14.61	17.00
REIMS	0.0886	0.0900	0.0894	0.0297	0.0282	0.0280	0.0769	0.0835	0.0754	23.70	18.31	25.97
AMIENS	0.1047	0.1023	0.1040	0.0284	0.0346	0.0308	0.0968	0.0953	0.0920	20.88	18.14	24.33
ROUEN	0.1026	0.0906	0.0907	0.0531	0.0414	0.0265	0.0887	0.0766	0.0761	22.47	23.16	25.71
LIMOGES	0.0624	0.0567	0.0603	0.0465	0.0541	0.0529	0.0562	0.0499	0.0510	11.12	11.30	14.99
NICE	0.0898	0.1067	0.1119	0.0991	0.0860	0.0590	0.0673	0.0897	0.0906	21.19	16.20	21.34
CRETEIL	0.1393	0.1318	0.1360	0.0450	0.0443	0.0364	0.1047	0.1025	0.1001	38.03	36.02	41.56
VERSAILLES	0.1653	0.1716	0.1767	0.0495	0.0522	0.0329	0.1167	0.1220	0.1266	37.37	36.33	37.28
CORSE	0.0650	0.0700	0.0682	0.0310	0.0230	0.0217	0.0591	0.0747	0.0616	32.31	32.43	34.78
REUNION	0.0820	0.0857	0.0907	0.0258	0.0259	0.0156	0.0917	0.0912	0.0868	22.53	29.09	44.12
GUADELOUPE	0.0707	0.0777	0.0991	0.0223	0.0230	0.0261	0.0712	0.0826	0.1024	17.95	23.76	28.00
MARTINIQUE	0.0644	0.0679	0.0709	0.0196	0.0219	0.0180	0.0623	0.0722	0.0726	22.25	10.53	17.32
GUYANE	0.1204	0.1223	0.1267	0.0517	0.0567	0.0546	0.0810	0.1890	0.0945	43.35	23.52	53.25
Size of urban unit												
Rural	0.0605	0.0627	0.0639	0.0714	0.0842	0.0837	0.0580	0.0588	0.0571	2.76	4.05	9.40
< 5,000 inhabitants	0.0578	0.0603	0.0606	0.0399	0.0462	0.0272	0.0578	0.0598	0.0583	1.80	1.84	5.49
[5,000 - 10,000[	0.0617	0.0756	0.0762	0.0475	0.0498	0.0510	0.0571	0.0703	0.0574	9.03	9.04	25.53
[10,000 - 20,000[	0.0634	0.0709	0.0764	0.0405	0.0398	0.0446	0.0563	0.0635	0.0592	14.78	14.57	25.09
[20,000 - 50,000[	0.0848	0.0899	0.0948	0.0438	0.0419	0.0410	0.0692	0.0794	0.0681	25.02	20.35	34.32
[50,000 - 100,000[	0.1021	0.1010	0.1028	0.0514	0.0446	0.0389	0.0698	0.0774	0.0752	35.84	30.54	34.98
[100,000 - 200,000[	0.1196	0.1179	0.1241	0.0485	0.0462	0.0397	0.0924	0.0919	0.0901	29.26	28.94	36.20
[200,000 - 2,000,000[	0.1553	0.1595	0.1632	0.0631	0.0532	0.0407	0.1090	0.1180	0.1135	35.78	33.83	39.48
Paris region	0.1878	0.1935	0.1975	0.0492	0.0620	0.0397	0.1398	0.1461	0.1436	37.61	35.24	40.16
Type of municipality												
Rural	0.0605	0.0627	0.0639	0.0714	0.0842	0.0837	0.0580	0.0588	0.0571	2.76	4.05	9.40
Isolated towns	0.0683	0.0706	0.0731	0.0534	0.0473	0.0368	0.0605	0.0612	0.0613	12.80	15.70	19.96
City centres	0.1313	0.1356	0.1382	0.0595	0.0634	0.0458	0.1096	0.1165	0.1131	23.44	20.58	26.81
Suburbs	0.1445	0.1433	0.1470	0.0531	0.0483	0.0365	0.1169	0.1183	0.1168	28.23	26.96	31.20

Reading note: *M* is the mutual information index; it is 0.1845 for the Paris regional education authority in 2004, 33.7% of which can be explained by differences in social composition between pupils in EP and pupils not in EP.

Sources: DEPP, BCS 2004-2016, authors' calculations.

authority to the next prior to 2014, and relative homogeneity after 2014. Between 2004 and 2014, social segregation within EP was increasing in

the majority of regional education authorities within large urban areas (Paris, Lyon, Lille), with the exception of Aix-Marseille. Conversely, it

is falling in the majority of small and medium-sized regional education authorities. It therefore appears that the EP middle schools are becoming increasingly heterogeneous in regional education authorities covering large urban areas and increasingly homogeneous in smaller urban areas (where levels of segregation were often low).²¹

After 2014, levels of segregation within EP decreased significantly in the majority of regional education authorities. The 2015 reform therefore had a tangible impact across almost the entire territory and has helped to re-homogenise the social composition of EP secondary schools in many regional education authorities. In Paris, the *M index* in EP fell from 0.0835 to 0.0358 in two years (a drop of around 53%). A significant fall was also seen in Aix-Marseille, Lyon, Versailles and Créteil, which were also affected by high levels of segregation within EP in 2014. In general, the few regional education authorities where *M* has not fallen are less urbanised and had low levels of segregation within EP to start with, for example: Besançon, Clermont-Ferrand, Reims, Limoges. This shows that the 2015 reform was, indeed, geographically targeted towards areas in which the (relative) effect of the fall in the number of disadvantaged pupils in EP middle schools up until 2014 was the most marked. In these areas, this has helped to refocus the scheme on disadvantaged groups.

If we look at the contribution of the differences between EP and non-EP to the observed levels of segregation by regional education authority, once again we see strong geographical disparities. As a result, in 2016, more than 42% of the segregation observed in the Aix-Marseille regional education authority resulted from the social differences between EP and non-EP secondary schools taken as a whole. This contribution is also close to 40% in Créteil and Versailles and 34% in Paris. Conversely, the contribution in the Caen and Rennes regional education authorities is less than 10%. Overall, these contributions tend to be low in the least segregated regional education authorities.²²

Between 2004 and 2014, the differences between EP and non-EP showed a narrowing trend in many regional education authorities, particularly in those covering large urban areas. The fact that the EP middle schools became more similar to other middle schools in 2014 in terms of their social composition therefore concerns the majority of the French territory. The 2015 reform helped to significantly increase the differences between the EP and non-EP sectors. As a

result of the refocusing of the scheme on disadvantaged populations, the social gaps between EP and non-EP middle schools have widened. This increase in the differences between EP and non-EP middle schools since 2015 is seen in almost all regional education authorities, particularly those where these differences already accounted for a significant proportion of total segregation. Therefore, in Paris, in spite of a sharp decline between 2004 and 2014, the differences between EP and non-EP middle schools still account for a quarter (25.1%) of total segregation in 2014. Following the 2015 reform, in Paris in particular (where there was a marked increase from 25.1% in 2014 to 34% in 2016), the differences between EP and non-EP middle schools reached a record high in the overwhelming majority of regional education authorities: EP and non-EP pupils had never been so different in terms of their social composition since 2004 across almost the entire country.

To conclude, in terms of targeting, the 2015 reform seems to have prioritised the regional education authorities in which the levels of segregation within the EP sector were high, i.e. where the EP middle schools were not socially heterogeneous. However, these regional education authorities were also those in which the social differences between EP and non-EP were the most marked; a situation that the 2015 reform helped to accentuate.

2.4. The Convergence of Priority Education and Non-Priority Education Middle Schools: An Urban Phenomenon

As regards the urban unit²³ division and the type of municipality, Table 4 shows that the larger the urban area, the greater the social segregation. In 2004, the *M index* was three times higher in the Paris region (0.1878) than in rural areas (0.0605). However, the levels of segregation are relatively similar between rural municipalities and small urban areas (with fewer than 20,000 inhabitants). Social segregation only really increases with the size of the urban unit from 20,000 inhabitants upwards.

The changes in segregation that took place prior to 2014 contrast with one another: there was an

21. These findings are confirmed below, through the analysis of segregation levels according to the size of the urban area.

22. For example, the Limoges, Dijon, Poitiers and Clermont-Ferrand regional education authorities have an *M* of below 0.0714 and a difference between EP and non-EP of less than 17%.

23. An urban unit is a municipality or group of municipalities with a minimum population of 2,000 across its continuous built-up area, where no more than 200 metres separates any two dwellings and where more than half of the population of each municipality lives within this continuous built-up area.

increase in the Paris region²⁴ and in small towns and rural areas, but a decline in medium-sized urban areas. From 2015 onwards, segregation increased again, regardless of the size of the urban area.

In 2004, the contribution of the differences between the EP and non-EP sectors to segregation was much lower in small urban areas (and even more so in rural areas, where EP is almost absent) than in large and medium-sized urban areas. As a result, the differences between the EP and non-EP sectors only accounted for a 2.8% contribution to social segregation in rural areas, compared with 14.8% in the urban units home to between 10,000 and 20,000 inhabitants and more than 35% in those with between 50,000 and 100,000 inhabitants (37.6% in Paris). The social differences between EP and non-EP establishments were therefore a largely “urban” phenomenon in 2004, which had little or no impact on small urban areas and rural areas. Twelve years on, although this urban/rural interpretation is still valid, the differences have narrowed considerably.

Indeed, since 2004, the dynamics of the differences between the EP and non-EP sectors according to the size of the urban area have remained relatively homogeneous: decreasing until 2014, except in rural areas and small towns, and increasing everywhere after 2014. During the period from 2004 to 2014, these findings confirm those mentioned in Table 4, where only the “small” regional education authorities, with low urbanisation, saw an increase in the differences between the EP and non-EP sectors. The convergence between EP and non-EP establishments seen at the national level is therefore an urban phenomenon. It is interesting to note that, between 2014 and 2016, although the differences between the EP and non-EP sectors were increasing throughout the country (peaking at 40.2% in Paris in 2016), this increase was much more pronounced in rural areas and small towns (from 4% to 9.4% in rural areas and from 9% to 25.5% in small urban areas with between 5,000 and 10,000 inhabitants). The rural areas can therefore be seen to be “catching up” with the urban areas: the social gaps between EP and non-EP middle schools were specific to the large urban areas in 2004 and almost non-existent in towns with fewer than 10,000 inhabitants, whereas this is now a much more widespread phenomenon. This development appears to be directly linked to the 2015 reform.²⁵

We have supplemented the above analysis with a decomposition by type of municipality

(Table 4). This “type of municipality” variable distinguishes between rural areas, isolated towns, suburban municipalities and those in city centres. The contribution of the differences between the EP and non-EP sectors is very small in rural areas and isolated towns. The changes to these differences between 2004 and 2016 in isolated towns are similar to those seen in small urban areas.

The levels of segregation were higher in suburban municipalities than in city centres in both 2004 and 2016. Above all, the differences between the EP and non-EP sectors were greater (contribution of 26.8% in city centres and 31.2% in the suburbs in 2016). The social differences between EP and non-EP middle schools are therefore more marked in the suburbs. However, it does not appear that the 2015 reform made a significant contribution to this: its impact (an increase in the differences between the EP and non-EP sectors) is similar for city centres and suburbs. More than just a central/peripheral phenomenon within large urban areas, the refocusing of EP on the least privileged secondary schools in terms of social diversity is a more general urban phenomenon.

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In this article, based on an analysis of data from the *Base Centrale Scolarité* between 2004 and 2016, we highlight a break in the targeting of priority education (EP) in 2015, with a shift in focus to the most disadvantaged pupils and the secondary schools with the least social diversity.

Our results show that the period from 2004-2014 corresponds to a decrease in the proportion of disadvantaged pupils in EP. In this context, the EP reforms did not constitute a refocusing of the schemes on the most socially disadvantaged middle schools; indeed, they did not systematically correspond to an eviction phenomenon among middle schools in which the social composition has become more favourable, nor did they bring about a “recovery” effect within

24. Given that, over the same period, segregation was falling in the Paris and Créteil regional education authorities and showing a moderate increase in the Versailles regional education authority, this means that the inter-academic gaps increased.

25. This sharp increase in the differences between the EP and non-EP sectors in rural areas and areas with low urbanisation was not the result of an increase in the proportion of EP within these areas from 2014 onwards. This has remained very low (3.2% in 2015) and close to or even below the levels observed previously (5.7% in 2014). This effect is therefore not linked to the higher weighting of rural areas, but rather an effect of the social composition of each of the sectors under the M index.

priority education for the secondary schools with a large proportion of disadvantaged pupils not previously enrolled in EP. In terms of social diversity, this period is characterised by a relative “standardisation” of EP, which is reflected in a decrease in inter-sectoral differences at national level. These findings appear to be quite at odds with the dynamics of the downgrading of secondary schools to EP highlighted by Trancart (1998) for the period from 1979 to 1997. A geographical analysis shows that the trend observed is driven by highly urbanised regional education authorities where the overall level of segregation is high.

In 2015, the introduction of the priority education networks (REP and REP+) represents a break in the trend. The latter resulted in the refocusing of EP on the most disadvantaged populations by means of the mass eviction of secondary schools with lower numbers of disadvantaged pupils. This refocusing of the target brought about a significant accentuation of the differences in terms of social diversity between EP and non-EP middle schools. The differences in

social diversity within EP middle schools have tended to decrease since the reform. We show that, contrary to the phenomenon of a fall in the proportion of disadvantaged pupils during the previous period, this phenomenon of refocusing EP and of accentuating the differences between EP and non-EP middle schools concerns many more regional education authorities and also affects rural areas and areas with low urbanisation.

Finally, unlike the other reforms that EP underwent during the period studied, the 2015 reform corresponds to the emergence of a heavier demarcation line in terms of target populations and the degree of social diversity between EP and non-EP middle schools in a relatively homogeneous geographical manner. It suggests that this new phase of targeting of priority education allows for resources to be concentrated on those most in need, both because these are the middle schools with a high proportion of disadvantaged pupils and because it is also in those same middle schools that the most disadvantaged pupils mix the least with other social groups. □

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APPENDIX

Table A-1 – Annual distribution of the social origin of pupils according to the sector that their middle school belongs to and its situation with regard to priority education (as a %)

	Social origin of pupils	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Sector of the middle school														
EP	Disadvantaged	62.5	62.0	61.6	60.9	61.4	61.4	61.2	61.1	61.1	61.1	61.0	64.4	64.7
	Intermediate	25.6	26.0	26.6	27.3	27.2	27.5	27.6	27.7	27.7	27.7	27.7	25.8	25.6
	Privileged	5.5	5.5	5.3	5.2	4.2	4.0	4.0	3.9	3.8	3.7	3.6	3.5	3.4
	H. privileged	6.3	6.5	6.5	6.6	7.1	7.1	7.2	7.3	7.4	7.5	7.6	6.3	6.3
State non-EP	Disadvantaged	38.5	38.1	37.9	37.2	38.3	38.2	38.0	38.4	38.5	38.7	38.8	37.9	37.8
	Intermediate	34.3	34.5	34.8	35.4	35.1	35.3	35.4	35.3	35.3	35.2	35.1	35.5	35.5
	Privileged	8.1	7.9	7.8	7.7	6.0	5.8	5.6	5.5	5.4	5.3	5.2	5.2	5.2
	H. privileged	19.0	19.5	19.4	19.6	20.6	20.7	20.9	20.8	20.8	20.8	20.9	21.4	21.5
Private	Disadvantaged	25.5	24.9	24.4	23.8	23.0	22.3	21.9	21.5	21.2	21.1	20.9	20.7	20.5
	Intermediate	37.0	37.0	37.1	37.2	37.2	37.1	37.1	37.0	37.0	36.8	36.6	36.3	36.0
	Privileged	8.3	8.2	8.1	7.9	7.7	7.4	7.3	7.3	7.3	7.3	7.2	7.2	7.3
	H. privileged	29.2	29.9	30.4	31.0	32.1	33.2	33.7	34.1	34.5	34.8	35.3	35.8	36.3
Total EP excluded(*)	Disadvantaged	35.3	34.9	34.6	33.9	34.5	34.3	33.9	34.2	34.3	34.4	34.4	33.2	33.4
	Intermediate	35.0	35.1	35.4	35.9	35.6	35.8	35.8	35.8	35.7	35.6	35.5	35.7	35.6
	Privileged	8.1	8.0	7.9	7.8	6.4	6.2	6.0	5.9	5.9	5.8	5.7	5.8	5.7
	H. privileged	21.5	22.0	22.1	22.4	23.5	23.8	24.2	24.1	24.2	24.3	24.5	25.3	25.3
Status of middle school with regard to EP														
Remaining in EP	Disadvantaged	-	62.2	61.6	60.9	61.4	61.3	61.6	61.1	60.9	61.1	61.0	64.6	64.6
	Intermediate	-	25.9	26.6	27.3	27.3	27.5	27.4	27.7	27.8	27.7	27.7	26.0	25.6
	Privileged	-	5.4	5.3	5.2	4.2	4.0	3.9	3.9	3.8	3.7	3.6	3.3	3.4
	H. privileged	-	6.5	6.5	6.6	7.1	7.1	7.1	7.3	7.5	7.5	7.6	6.1	6.3
Entering EP	Disadvantaged	-	52.5	66.9	62.1	79.4	64.2	54.3	62.3	71.5	48.3	44.9	63.7	79.5
	Intermediate	-	29.8	27.4	27.4	12.5	26.7	31.6	26.7	20.4	37.3	44.9	25.3	14.2
	Privileged	-	7.1	3.8	4.9	4.4	3.1	4.7	4.1	3.7	4.5	2.3	4.1	2.7
	H. privileged	-	10.6	1.8	5.6	3.7	6.0	9.4	6.8	4.4	9.9	7.9	7.0	3.6
Leaving EP	Disadvantaged	-	63.6	61.0	55.1	57.8	50.4	52.3	62.4	63.9	43.1	71.8	45.2	65.0
	Intermediate	-	25.4	21.8	32.3	29.3	32.6	31.8	26.5	26.4	34.9	20.9	35.2	23.6
	Privileged	-	5.6	5.0	6.2	4.8	4.6	4.5	3.2	5.2	6.1	1.8	4.8	6.4
	H. privileged	-	5.4	12.2	6.3	8.2	12.4	11.4	7.8	4.5	15.9	5.5	14.8	5.0
Remaining in EP throughout 2004-2016	Disadvantaged	65.6	65.4	65.1	64.5	65.1	64.8	64.8	64.7	64.6	64.6	64.5	64.8	64.9
	Intermediate	24.2	24.3	24.9	25.5	25.5	25.9	25.9	26.0	26.0	26.1	26.2	26.0	25.8
	Privileged	5.1	5.1	4.9	4.8	4.0	3.7	3.6	3.6	3.5	3.4	3.4	3.3	3.3
	H. privileged	5.1	5.1	5.1	5.1	5.5	5.6	5.6	5.8	5.8	5.9	6.0	5.9	6.0
Entering EP (excluding new establishments)	Disadvantaged	-	52.5	66.9	62.7	57.4	-	54.3	62.3	72.2	48.3	42.3	63.3	74.7
	Intermediate	-	29.8	27.4	27.3	30.9	-	31.6	26.7	20.0	37.3	46.8	25.5	17.9
	Privileged	-	7.1	3.8	4.8	3.4	-	4.7	4.1	3.5	4.5	2.5	4.1	1.8
	H. privileged	-	10.6	1.8	5.1	8.3	-	9.4	6.8	4.3	9.9	8.4	7.1	5.6
Leaving EP (excluding those that have closed)	Disadvantaged	-	61.9	22.5	43.0	44.9	48.4	51.1	61.3	-	36.5	-	45.2	66.9
	Intermediate	-	26.2	38.2	41.7	38.9	33.8	32.6	27.4	-	40.5	-	35.3	22.3
	Privileged	-	6.0	10.8	7.3	5.8	4.8	4.6	3.3	-	6.9	-	4.8	6.7
	H. privileged	-	5.9	28.4	8.0	10.4	13.0	11.7	8.0	-	16.2	-	14.8	4.1

Notes: EP stands for priority education (*éducation prioritaire*); (*) includes state and private non-EP schools.

Reading note: The proportion of highly privileged (abbreviated 'H. privileged' in the table) pupils within EP middle schools in 2004 was 6.3%. In 2005, the proportion of disadvantaged pupils among the middle schools enrolled in EP in 2004 and that remained in EP in 2005 was 62.2%. Among the middle schools that had recently entered EP (i.e. those that were non-EP in 2004 or had just been established), this proportion was 52.5%. Among the middle schools in EP in 2004 and that left in 2005 (or no longer existed), this proportion was 63.6% in 2004.

Sources: DEPP, BCS 2004-2016, authors calculations.

Table A-2 – Changes in segregation and breakdown by sector at national level for an alternative definition of social categories

Type of index/years	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
<i>M</i>	0.1216	0.1238	0.1227	0.1219	0.1229	0.1232	0.1232	0.1232	0.1234	0.1230	0.1241	0.1257	0.1271
Proportion (as a %) of <i>M</i> explained by differences in composition between...													
...the 3 sectors (EP, state non-EP, Private)	26.8	26.7	27.1	27.7	28.1	28.6	29.1	29.0	29.8	30.3	30.5	36.4	37.1
...EP/non-EP	21.0	20.8	20.7	21.0	20.3	19.7	19.9	19.2	19.3	19.3	19.1	25.6	26.0
<i>M</i> EP	0.0549	0.0565	0.0558	0.0565	0.0563	0.0557	0.0558	0.0557	0.0568	0.0561	0.0568	0.0432	0.0441
<i>M</i> non-EP	0.1046	0.1066	0.1057	0.1043	0.1061	0.1069	0.1065	0.1080	0.1075	0.1072	0.1085	0.1035	0.1041

Notes: The social groups differ from the classification used by the DEPP: the children of "company managers" are included in the "privileged" group (rather than the "highly privileged" group); the children of direct personal service employees are included in the "disadvantaged" group (rather than the "intermediate" group).

Reading note: EP stands for priority education (*éducation prioritaire*); *M* is the mutual information index; it is 0.1216 for 2004, 21.0% of which can be explained by differences in social composition between pupils in EP and those not in EP.

Sources: DEPP, BCS 2004-2016, authors calculations.

Table A-3 – Test of difference between the proportion of pupils in EP in 2014 and in 2015 (among disadvantaged pupils)

Year	Proportion of disadvantaged pupils in EP	Number of disadvantaged pupils in EP	Results
2014	24.8%	1,268,197	Statistic = -106.78 p-value = 0.000
2015	27.4%	1,265,585	

Reading note: The proportion of disadvantaged pupils educated in EP in 2014 was 24.8% and they numbered 1,268,197. The test statistic (difference in proportion between 2015 and 2014) equals -106.78.

Sources: DEPP, BCS 2004-2016, authors calculations.