Are minorities over-represented in crime? Twenty years of data in Is'ere (France)

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Abstract

In many developed countries the proportion of convicted individuals belonging to stigmatized minorities is much larger than the share of these minorities in the overall populations. We explore whether socioeconomic status may explain this overrepresentation in the criminal justice system through the analysis of individual characteristics and sentence outcomes of juveniles convicted for serious crimes in Isère (one of the 96 French Metropolitan Departments) in the 20-years period ranging from 1985 to 2005. Serious crimes (liable to imprisonment) have a higher clear-up rate than petty crimes, and are thus probably less biased by police differential selection, one of the reasons invoked to explain minorities over-representation. The majority of juveniles in our database live in urban areas and, according to our estimations based on the parents' socioeconomic status, they are also a majority to live in households below the poverty threshold. Restricting to this subpopulation, we do not find any evidence of over-representation: the proportion of juvenile offenders belonging to minorities is of the same order of magnitude as their share in the overall urban juvenile population living below the poverty threshold.

Introduction

According to the literature on sociology and criminology, mainly based on US official crime statistics – which are easily accessible –, the proportion of convicted individuals that belong to stigmatized minorities is much larger than the share of these minorities in the overall population. As Tonry [1] points out, this is not exclusive of the US, since in every Western country there exist some minority groups that are disproportionately likely to be arrested and convicted. Blacks and Latinos are ~ 7 times more likely to be incarcerated in the US than White individuals. In England and Wales the minorities are Blacks and Asians, in Sweden these are Arabs, South-Americans and East-Europeans.

Are minorities victims of segregation by the repressive system due to racial profiling [2], or are there cultural [3], economic, or other reasons for this overrepresentation?

These questions are often raised in public debates (see for example [4]). In contrast, partly due to the lack of data about the origin and socio-economic characteristics of the incriminated populations, academic research addresses this issue very cautiously.

There is a long-standing discussion about the impartiality of justice with respect to the stigmatized minorities. One of the central issues in the field of criminal justice is to determine whether higher levels of imprisonment among minorities and immigrant groups are the result of actual levels of offending, or are due to systemic discrimination in the criminal justice system (CJS) processes and actions. Disparities in the judicial system treatment as well as sentencing discrimination of stigmatized sub-populations have been incriminated by many authors. For example, it has been argued that differential deployment of police and other criminal justice officials against Black and Latinos is the primary factor underlying their overrepresentation in US prisons [5]. Moreover, a study [6] of the representation of minority youth along the justice system process – arrest, intake, detention, adjudication and disposition – based on data from Florida State shows that "*... nonwhites make up 21% of the population at risk (ages ten to seventeen) and 29% of the cohort referred to delinquency intake, they make up 44% of the cohort incarcerated or transferred* ". Similar results have been reported by other authors [7]: overrepresentation of minorities increases at each stage of the process.

Poverty and educational level are known to be highly correlated with delinquency. In a recent paper, Johnson and Betsinger [8] point out that Asian Americans, who have a higher mean level of education and lower rates of poverty and unemployment than other minority groups, are underrepresented in official crime statistics. Notice that poverty seems to have a high correlation with imprisonment, but in the mentioned work there are no direct measures of socioeconomic status. This is a common trait of criminological studies. Quoting Zatz [9]: *Class is one of the paramount sociological variables, yet our measures of it in criminal justice data are abysmal.*

In many published studies that include poverty as an explicative variable, the offenders are given the average poverty level of the neighborhood where they live because generally the individuals' actual income is not precisely known (see for example [10, 11, 12, 13, 14, 15, 16] and papers cited therein). This is a reasonable practice for normally distributed variables, and within small, homogeneous enough, neighborhoods. At more aggregated spatial levels, since inequality distributions have heavy tails [17], the mean is *not* a good estimate of individuals' characteristics because there are much many cases far from the average than in gaussian distributions. Thus, using the mean to characterize the population's poverty level in non-homogeneous areas may lead to incorrect conclusions: if one considers in particular the income distribution, the mean is not representative since it overestimates the living standard of the poorest. Also, delinquents are not necessarily typical individuals of their neighborhoods, so that average descriptors are not necessarily well correlated with the characteristics of the offenders.

The correlation between poverty and offending behavior has been investigated using different indicators. For example, using data generated by a randomized housing-mobility experiment in Baltimore, Ludwig et al [14] present evidence that relocating families from high- to low-poverty neighborhoods reduces juvenile arrests for violent offenses by 30 to 50 percent of the arrest rate of controls: high-poverty areas have on average more violent crime but less property crime than low-poverty areas. Another indirect evidence of the incidence of poverty on crime is the fact that in big cities (where crime rates are larger) one third to one half of the urban effect on crime (with respect to rural crime rates) can be explained by the presence of more female-headed households in cities [18]. These are generally poorer than households where the two

parents are present.

There are very few studies of the influence of race or ethnicity on sentencing in European countries. A recent publication [19] reports that in England and Wales, members of racial minorities, particularly Blacks, are stopped and searched by the Police far more frequently than the corresponding disparity in offending. This disparity, observed also in the USA ([5] cited above) in the first stage of the judicial system process may lead to the observed overrepresentation [7].

There is an ongoing debate in France – as well as in many developed countries – in which some politicians, journalists and scholars claim that minorities issued from recent immigration currents are over-represented in prisons. Such affirmations underpin the idea that minorities have more pronounced criminal inclinations that the native population. These claims would need clear-cut definitions of what is meant by "native" population, specially in France, where a large proportion of the inhabitants are issued of quite recent immigration currents, in the XIXth and XXth centuries. According to a recent publication [20] 10% of the French population in 2008 are direct descendants (born in France) of immigrants (born abroad), the latter represent 8% of the population. However, since it is very difficult to obtain information about the racial, ethnic, religious or geographic origin of individuals in Europe, sometimes these claims are based on unclear criteria like the family names or visual perception by the police, as in the referred study [19] concerning England and Wales.

Many papers find that there is a strong correlation between poverty and crime rates [12, 21]. In a panel data analysis of violent crime including 45 different countries in homicide regressions and 34 in robbery regressions, over 24 years, Fajnzylber et al. [22] find that increases in income inequality raise crime rates, that crime tends to be counter-cyclical (stagnant economic activity induces heightened crime rates), and it is self-perpetuating (high past crime rates are correlated with actual crime rates, i.e. criminal inertia is significant). Similar conclusions are presented in [11] and [23]: violent crime is found to be poverty-driven while some forms of property crimes are found to be largely opportunity-driven.

In the present paper we examine the relationship between criminality, poverty and minorities in France. Our results are based on empirical data that include individual characteristics and sentencing outcomes of juveniles convicted of serious crimes in Isère (one of the 96 Metropolitan French Departments) in the 20-years period ranging from 1985 to 2005. Juveniles are among the most active offenders according to the national statistics of most countries. Serious crimes (liable to imprisonment) have a higher elucidation rate than petty crimes, and are thus probably less biased by police differential selection, because authors are actively searched (petty crimes authors are often found due to denunciation). This assumption is supported by a recent study [24] of juvenile arrests based on the FBI's National Incident-Based Reporting System that revealed indeed no direct evidence of racial bias in juvenile arrests for violent crimes.

This is the first time, to our knowledge, that such a study is carried out in France[1]. In contrast with North American studies, where discriminated minorities are mainly Blacks and Latinos, in France they are mostly Muslims [26] of first, second, and even third generation, descendants of African – mostly from Maghreb – and Turkish immigrants. Since there are neither ethnic nor racial indications in French official documents, we classify the convicted juveniles as belonging to the majority or the (stigmatized) minority populations according to the parents' birthplaces – i.e. their geographic origin – a practice introduced by the French National Institute of Statistics and Economic Studies (INSEE). In this paper we label TA the stigmatized populations

[1]Only a report with descriptive statistics of the data set has been published in French [25].

and group together under the label EU the population of European origin (including springoffs of French nationals), that are referred to as the majority population in the following.

Our bare data are consistent with the widespread opinion that stigmatized minorities are over-represented among the convicted population, with respect to their share in the *overall* population. But our data correspond to *juveniles* belonging to the *poorest population* living in *urban* areas. One should compare what is comparable, i.e. statistics should be done within the populations having similar sociological characteristics.

Our hypothesis is that the percentage of TA juveniles in the urban sub-population living below the poverty threshold is much larger than the percentage of TA in the overall population, mainly because minority households have on average lower incomes than majority ones and also because French families have less offsprings than immigrants. To test this hypothesis we need information unavailable in France: the fractions of youngsters of different origin living below the poverty threshold. There is no statistics at all of the distribution of living standards among juveniles according to their origin. The statistics published by the INSEE give the poverty distribution among immigrants and non-immigrants, aggregating together, in the latter category, households that belong to the stigmatized minorities and households of European immigrants.

In the present paper we circumvent these lacks through estimations of the poverty levels based on a recent publication of the living standards of the French population according to their geographic origins. This allows us to define a juvenile reference population against which we compare the offenders' majority and minority sub-populations. Restricting the analysis to similar ages, living standards and neighborhoods, i.e. comparing youngsters living under similar conditions, we find that the proportions of majority and minority offenders are similar to the proportions of majority and minority youth in the reference population: in our data there is *no evidence* that criminals belonging to the stigmatized minority are more numerous than those belonging to the majority.

The article is organized as follows: we first describe the database and the pertinent characteristics of the offenders (section 1). In section 2 we estimate the proportions of juveniles belonging to the stigmatized minorities and to the majority populations living below the poverty threshold in urban areas of Isère, France. This constitutes the reference population against which our data are compared. In section 3 we detail how we estimate the poverty level of the offenders using the information about their parents and siblings in the database. The main results of our paper are presented with a graphic in section 4. Our conclusions are discussed and summarized in section 5. Some technical data and results are presented on Appendices.

1 The data (Isère, France: 1985-2005)

Our database contains informations about all the sentences (1 868) passed on juveniles (below 18 years old) tried for serious crimes during the 20 years period 1985-2005 in the three judicial jurisdictions of the French Department Isère (population according to the 1990 census published by the INSEE: 1,016 million inhabitants; 8% foreigners[2];

[2]Foreigners and immigrants cover two different concepts: a foreigner is a person that does not have the French nationality; an immigrant is born abroad and entered France with a foreign nationality. Thus, not naturalized immigrants are counted as immigrants while French naturalized ones are counted both as immigrants and as foreigners. Conversely, a foreigner born in France – i.e. with foreign parents – who

283 413 juveniles less than 20 years old, among which 149 684 children 10-19 years old (15% of the population)).

Detailed information, encoded through 217 numerical descriptors and additional textual information, have been encoded. The considered offenders are charged with one of the 8 more frequent crime types that are punishable with prison according to the French Law (see Table 1). These offenses belong to two categories: *serious offenses* which may entail up to 7 years imprisonment, and *crimes*, for which prison sentences may be even longer. We will call them both indifferently either *crimes* or *offenses* in the following.

Since we are interested in the criminal population, we only include data of actually convicted juveniles, declared guilty by the Courts; we excluded:

- 264 records of convicted juveniles for which we could not trace back their origin, as explained in section 1.1,
- 8 records subjected to the statute of limitation[3],
- 12 records of offenders not yet tried,
- 90 acquittals,

leaving thus 1 494 records for our analysis.

1.1 Offenders' origins: discriminated minority (TA) and majority (EU)

Different stigmatized populations have existed historically in France. In the recent decades, South Italian, Spanish and Portuguese immigrants, nowadays quite well integrated, have suffered from discrimination until the sixties. According to reference [26], since the independence of Algeria in 1962, the main stigmatized populations are mainly muslims, immigrated from Africa and Turkey, their offsprings and even their grandchildren.

Most of the sentences in our database (precisely 84.5%) concern juveniles that are French, either because their parents or themselves are French-born or because they have adopted the French nationality. Since neither religion nor ethnic traits are available in French documents, it is not possible to trace back the offenders geographic, religious or ethnic origin accurately. In this paper we apply the same criteria as the INSEE (the French National Institute of Statistics and Economic Studies) to characterize the origin of the juveniles: we use the birthplace of the parents as a proxy to label whether an individual belongs or not to the discriminated minority. More precisely, we label **TA** individuals having at least one parent born either in **T**urkey and/or in **A**frica (Maghreb —Algeria, Morocco, Tunisia— or other African countries). In contrast, we assume that individuals whose parents are **Eu**ropean, born either in France or in another European country, belong to the majority group (hereafter denoted **EU**). In the next section we discuss the pertinence of this classification. Notice that the TA population is thus composed of immigrants and immigrant offsprings. The EU population is composed of native French offsprings and of European immigrants and their offsprings. We are unable to trace back the origins beyond one generation because we do not have any information about the grandparents of the juveniles. Those with French born parents are thus considered French. Given the covered period (1985-2005) there are very few grandchildren with African or Turkish ancestors, because their

adopted the French nationality is neither counted as foreigner nor as immigrant.

[3]In French: prescription de l'action publique

main immigration current dates back to the sixties, and the women entered France mostly after 1976, when the family reunification was again authorized, after complete suspension of immigration in 1974.

Following the criteria used by the INSEE in some of their statistics, criteria also used in [27] and in a recent large survey [28] called TeO ("Trajectoires et Origines") covering 22 000 persons living in Metropolitan France in 2008, we adopted the following criteria to attribute an origin to each individual:

- if both parents are born in Europe, the origin is EU,
- if one of the parents is born in Europe and the other abroad, the offender is attributed the origin of the latter,
- if only one parent's birthplace is known, it determines the offender's origin,
- if both parents birthplaces are unknown, and the offender is not French, we assume that the origin is given by the offender's nationality,
- if both parents' birthplaces are unknown, and the offender is French, we exclude the record from our study because nationality in our database is a poor indicator of the origin.

Besides the offenders with unknown geographic origin we also excluded from the present analysis those with Asian origin. They constitute a too small subset of our database (16 cases) to give significant results. Also, according to [29] – based on the already mentioned TeO survey –, the burden of being Asiatic in France is slighter than that of being TA[4] .

After data streamlining, our study is based on 1 478 sentencing dispositions concerning juveniles in Isère in the period 1985-2005[5] which, according to the above criteria, are classified into 677 sentences concerning EU, 801 concerning TA, juveniles.

Interestingly, 1 249 sentences correspond to offenders that are French nationals: 645 EU (95.3% of the EU) and 604 TA (75.4% of the TA). Clearly, nationality is a poor proxy for the juvenile offenders' origins.

The present classification suffers from several pitfalls:

- we are blind to skin color despite the fact that discriminated minorities consider skin color as one of the strongest reasons of discrimination [29]. Black immigrants from Sub Saharian Africa are classified as TA. However, according to the adopted classification, the Black native French population with origins in the *Départements d'Outre Mer* or DOM (which include in particular the French Antilles, with an important Black population descendant of African slaves) are considered EU. Notice that the same pitfall mars all the French statistics. In particular the Constitutional Council refused the question of skin color to be included in the questionnaire of the TeO survey [29];
- in the sixties, when the former French colonies gained independence, part of the population having the French nationality – both of Europen and Algerian origin – has been repatriated. The offsprings of the former French settlers belong to the majority population. However, since we cannot trace back whether the offenders belong or not to settlers' families, all those whose parents were born in

[4]This burden is measured by the proportion of persons that answered "often" or "sometimes" to the question (translated from reference [29]) :"Have you suffered from discriminative treatments during the last five years?"

[5]We do not have complete information for all the 1 478 cases. Some of the results are thus based on subsets of these data. For example, 105 records do not have any information indicating whether the offender is or not recidivist.

the colonies – generally in Maghreb– are classified as TA according to our rules. This introduces some distortion in our counting as well as in our estimations of poverty of the TA population [6];

- the third generation of immigrant descendants are classified as EU because their parents are born in France. However, they may suffer from similar discriminations as their parents, as was highlighted by the survey TeO already mentioned [29]. Including grandchildren of TA immigrants as being EU might blur somehow our results. However, given that the number of female immigrants peaked during the 70's (thanks to the government's policy of familial grouping), we expect that there are few offenders of third generation in our data base.

Despite these drawbacks, we expect the results of our study to be significant, mainly because the sub-populations that belong to the above mentioned categories are small fractions of the overall population.

It is interesting to note that among the 1 478 records, 986 correspond to lone offenders (476 EU, 510 TA) and 203 to group offenses (two or more offenders). The latter have given raise to 492 individual sentences (*i.e.* there are in average 2.42 juvenile offenders per group. Adults also participate in some of these groups, but we do not have any information about the corresponding sentences. Thus, we do not know precisely the actual size of the groups, only the number of juveniles that participate in them.).

1.2 Considered offenses

Table 1: Considered types of crime and sentences distribution

crime type	total		EU	TA
description	N	%	%	%
homicides	18	1.2	1.5	1.0
AR	191	12.9	10.9	14.6
robbery with GBH	50	3.4	2.5	4.1
rape	68	4.6	4.6	4.6
sexual assault	265	17,9	25.6	11.5
ADW without WD	190	12.9	12.1	13.5
ADW with WD $<$ 8 days	289	19.6	16.8	21.8
total	1478	100.0	100.0	100.0

AGBH: **A**ssault causing **G**rievous **B**odily **H**arm; ADW: **A**ssault with a **D**angerous **W**eapon; AR: **A**rmed **R**obbery; WD: **W**ork **D**isruption

Our data base corresponds to sentences passed on juveniles that committed one of the crimes punishable by prison according to the French Law. The types of crimes as well as the corresponding number of sentences passed on offenders of each origin are detailed on Table 1. Homicides, robbery with grievous bodily harm (GBH) and rape represent altogether less than 10% of the sentences (more precisely, 9.2%) while armed robbery with bodily harm (AGBH) with $>$ 8 days of work disruption (WD) is the most frequent type of offense, with 27.5% of the sentences. The sentence harshness is determined to a large extent by the legal category of the crime, assessed by the courts. However, there is no agreement on any scale of offense seriousness: scholars claim that the legal categories used by judges are not specific enough and allow for large variations

[6] In 1990, the less than 18 years old in France that belong to repatriated families are 5.4% of the minors. In Isère, the percentage is 7.5% [30], which represents 41% of the TA juveniles.

inside categories (Kleck, 1981). In particular, this latitude may leave place to ethnic bias in sentencing, an eventuality that has been and is being investigated by many authors[7].

Table 2: Share of EU and TA convictions for each type of crime

crime type	EU		TA	
description	N	%	N	%
homicides	10	55.6	8	44.4
AGBH with WD $>$ 8 days	176	43.2	231	56.8
AR	74	38.7	117	61.3
robbery with GBH	17	34.0	33	66.0
rape	31	45.6	37	54.4
sexual assault	173	65.3	92	34.7
ADW without WD	82	43.2	108	56.8
ADW with WD $<$ 8 days	114	39.4	175	60.6
total	677	45.8	801	54.2

AGBH: **A**ssault causing **G**rievous **B**odily **H**arm; ADW: **A**ssault with a **D**angerous **W**eapon; AR: **A**rmed **R**obbery; WD: **W**ork **D**isruption

Table 2 details the share of EU and TA convictions corresponding to each type of crime. EU offenders are more represented than TA in sexual assaults, while TA are relatively more numerous in all the other types of crimes. Globally, 54% of the sentences are passed on TA offenders, clearly a much larger proportion than the share of the TA juvenile population in Isère, which is of the order of $\approx 10\%$ [30] according to the censuses of 1982, 1990 and 1999 (source: database Saphir [32]).

Notice however that figures both in Table 1 and Table 2 correspond to *sentences* and not to offenders. Among the latter there are recidivists that have been sentenced several times in the considered period. We further discuss this point in the next section.

1.3 Yearly sentences

The total number of sentenced offenders as a function of the year of the crime is represented on figure 1. Clearly, some crimes perpetrated after 2002 have not yet been sentenced, and we have sentences of crimes committed before 1985. In the regressions presented in this section we only take into account crimes committed in the period 1984-2002, to minimize the bias due to delays in police elucidation or court sentencing. The figure also shows a striking increase in the number of sentenced crimes after 1993. One possible explanation may be found in the report by Aubusson et al. [33] who mention a modification in legal procedures: the Police was asked, between 1993 and 1997, to bring before the Courts more systematically the cases involving minors.

Figures 2 presents the number of sentenced EU and TA offenders separately. On average, the number of sentences is a noisy increasing function of the year the offense has been committed. The number of sentenced offenses committed by EU juveniles increases at a rate slightly larger than 1 per year while the corresponding rate for TA offenders is about twice as large. Thus, despite the fact that in the eighties there are more EU than TA sentenced offenders, at the end of the nineties the latter are much more numerous. This might justify the claims that the TA population is more prone to criminality than the EU one. However, one should take into account the fact that some of the crimes are committed by recidivists, meaning that the observed increase in

[7]We address this problem using the same database in another publication [31].

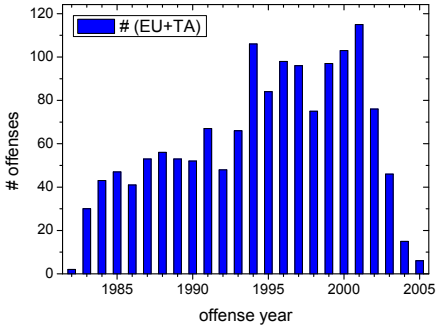

Figure 1: Number of sentenced crimes as a function of the year of perpetration, all the minors together.

the number of sentenced offenses does not mean that the number of offenders increases at the same rate. Notice that the increase of the Courts' activity after 1993 seems to be concentrated on the offenders of TA origin, soaring dramatically at 1994. We further discuss this question in a forthcoming paper[31], where we study whether there is an ethnic bias in the criminal justice system in France.

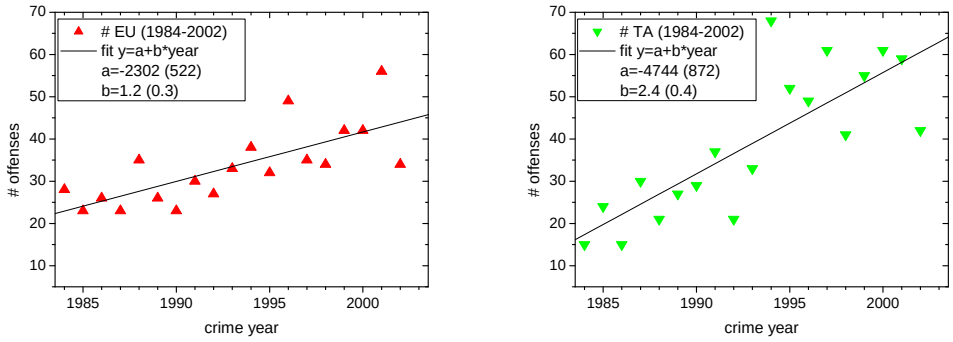

Figure 2: Number of sentences as a function of the crime perpetration year. Left: EU offenders. Right: TA offenders. In parenthesis, standard errors.

The number of *different* offenders in our database is 1 216, 598 EU, 618 TA. Among them there are 100 recidivists, 75 TA and 25 EU, who committed 262 offenses, 199 and 63 respectively, thus totalizing the 1 478 files. Given our precision, the average number of offenses per recidivist is roughly the same for both groups, of the order of 2.6. In contrast, there are slightly more EU first offenders than TA (573 and 543 respectively).

In order to further clarify whether the proportion of TA delinquents is abnormally high, we consider the number of first offenses as a function of the perpetration year.

Figures 3 show the regressions for the number of TA and EU first offenders. Surprisingly, the rate at which young TA and EU perpetrate their first sentenced serious crime given the dispersion of the data is roughly the same (in fact, it is 19% larger for TA than EU, see next section for a discussion of this difference). This is a strong evidence that the larger number of sentenced offenses committed by TA juveniles is mainly due to recidivism, which is more frequent among TA offenders than among EU ones.

It remains that the proportion of TA young offenders seems abnormally large, given that the proportion of youngsters of foreign origin (including offsprings of TA and of non-French European immigrants) in Isère in the period 1982-1999 has dropped from $\sim 25\%$ to $\sim 20\%$ [30].

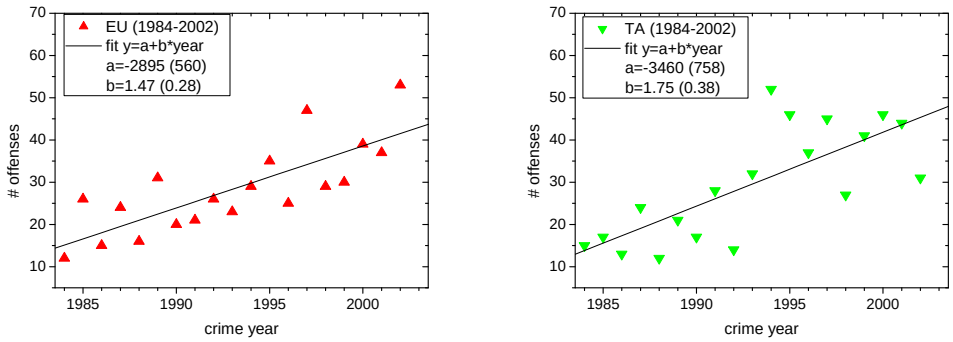

Figure 3: Number of sentenced first offenders as a function of crime perpetration year.

Figure 4 shows the average age of the first offenders as a function of the year of the first offense. Despite the large dispersion, there is no statistical difference between EU and TA: their first crime is committed on average at 15.4 years old.

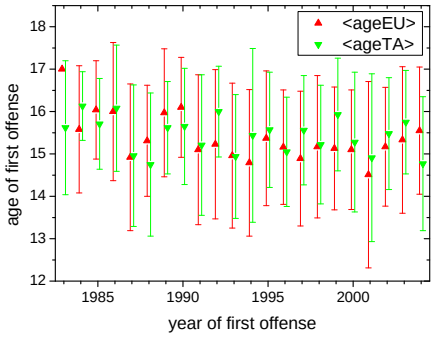

Figure 4: Average age of first offenders as a function of the year of the first offense.

The rest of the paper is devoted to explore whether poverty may explain the main observed fact, namely, that there are as many TA as EU young first offenders that are sentenced for serious crimes in Isère, and that their number increases roughly at the same pace, despite the fact that the relative proportion of TA to EU juveniles in the Department's population is much smaller than 1.

2 Poverty in France

Poverty of children is not well documented in any country of the European Union. According to the 2010 report for the European Community [34] "*... statistics are not well suited to issues such as the situation facing the children of migrants or of minority ethnic groups*". The same remark applies in particular to French statistical data. In this paper we benefit of some specific results from the database SAPHIR, collected by INSEE Alsace [32] based on the census data of the years 1968, 1975, 1982, 1990 and 1999, which provides the numbers of juveniles of different origins in urban and rural areas in France. We restrict our analyses hereafter to the years 1982, 1990 and 1999, the others being not pertinent for the youngsters of our database.

The poverty of a household is generally measured by its *living standard*, which is equal to the income of the household (after deduction of direct taxes) divided by the number of consumption units. The latter is a number that takes into account that living expenditures are a decreasing function of the family size: the householder represents one consumption unit, 0.5 units are added for each of the other members of the household older than 14 years old, 0.3 units for children below 14 years old. By definition all the components of the household have the same living standard. Thus, the parents' profession, the type of family and the number of siblings are strong indicators of poverty levels.

According to the 1999 national French census, there are 16 096 782 households in France; there is a single adult in 12.3% of the cases, 87.7% correspond to couples; 45.3% of the households do not have children, 22.9% have one child, 20.6% and 8,1% have respectively two and 3 children; only 3.1% have 4 children or more. The most frequent number of children is 2. At the local level, statistics for Isère show similar trends: there are 429 047 households in 1999. A majority (299 792) correspond to families; among these 34 644 are single-parent families. The average number of children is slightly smaller than 2.

In European countries families are considered to live below the *poverty threshold* if their living standard is below 60% of the median income. Since in France the great majority of the population earn low wages, the median income is very close to the minimal wage. The *poverty rate* is the percentage of the population living below the poverty threshold at 60% (that is, with a living standard that is below 60% of the median living standard of the population).

According to statistics from INSEE, the poverty rate in France has not changed significantly since 1984: in the period 1990-2002 it has slowly decreased from 14.7% to 12.9% (with subsequent small fluctuations around 13% from 2003 to 2005). A recent INSEE publication by Lombardo and Pujol [35] gives very detailed informations about poverty in France in 2007. In particular, the poverty threshold corresponds to a living standard of 908 euro per month. Since the minimal wage before tax deduction in 2007 was 1 280 euro per month, the poverty threshold of the French population corresponds to $\approx 70.9\%$ of the minimal wage. This figure will be used in section 3 to estimate the living standard of the offenders in our database.

Poverty is very unevenly distributed according to the origin of the householders.

In France (Metropolitan Area) the poverty rates of households living below the 60% poverty threshold are [35]:

- 42.7% among African immigrants,
- 24.0% among European immigrants,
- 11.3% among non-immigrants.

In the absence of official statistics, we use these percentages in the next section to estimate the proportions of EU and TA that live below the poverty threshold in Isère. We apply the same percentages to the data, irrespective of the census year, because this information is only available for 2007, and, as already mentioned, the demographic structure of poverty has not changed significantly since 1984.

2.1 Juvenile population in Isère

In the period spanned by our study, the population in Isère according to the censuses has increased from 936 728 in 1982 to 1 094 768 in 1999, i.e. roughly 17%. In the same period, the total number of children younger than 18 years old living in households with an adult householder (usually, but not necessarily, a parent) are 246 904 in 1982, 245 704 in 1990, 248 148 in 1999, the increase being less than 1%.

The number of juveniles according to their geographic origin living in urban and non-urban areas for the census years between 1968 and 1999 have been published in a detailed report [30] based on the INSEE database SAPHIR [32][8] . Among them, a small number (3 704 in 1982, 4 904 in 1990, 5 657 in 1999, representing respectively 1.5%, 2.0% and 2.3% of the children) have Asian or American origin. In the following, whenever we present percentages of EU and TA we exclude the juveniles corresponding to other origins, so that the sum is 100% and comparisons between the demographic data and our crime data (where we have excluded the records corresponding to these origins, which represented 1.1% of the sentences) is straightforward.

We first review the demographic information contained in the database SAPHIR – all living standards aggregated –. Then we estimate the proportions living below the poverty threshold applying the percentages published by Lombardo and Pujol [35] for the year 2007, detailed in the preceding section. These estimations are justified by the fact that the proportions of households living below the poverty threshold in the period 1985-2005 did not vary significantly within that period.

Globally, the percentage[9] of EU (respectively TA) youngsters less than 18 years old in the period of interest, 1985-2005, reported on the first line of Table 3, is seen to vary smoothly around $\sim 82\%$ (TA are close to $\sim 18\%$) with deviations smaller than $\pm 2\%$. Notice that the juveniles are very unevenly distributed in the Department's territory: the TA youngsters are relatively more numerous in urban areas, as may be seen in the Table.

Thus, based on the SAPHIR database, one might expect the same ratio among juvenile criminals, i.e. ≈ 2 TA for 8 EU. This is far from being the case in our database, which presents a ratio of $\sim 1:1$, as detailed in section 1.3 above.

[8] In the mentioned database are called urban those areas under supervision of the "Police", non-urban those areas under the supervision of the "Gendarmerie". The latter correspond to the less densely populated regions, mostly rural.

[9] The actual figures – deduced by ourselves from data kindly made available by Bernard Aubry and Michèle Tribalat – are detailed in the Appendix (section 6.2).

Table 3: Percentage of children of EU and TA origin in Isère (global) and the composition of urban and non-urban areas. Other origins are excluded in the calculation of the percentages, as explained in the text.

	year		
	1982	1990	1999
global			
TA (%)	19	19	16
EU (%)	81	81	84
urban			
TA (%)	26	29	27
EU (%)	74	71	73
non-urban			
TA (%)	15	15	12
EU (%)	85	85	88

2.2 Juvenile poverty in Isère

In this section we combine the numbers of youngsters in Isère with the national poverty percentages detailed in section 2 to *estimate* the poverty levels according to their origin, i.e. the proportions of minors with EU and TA origin living below the poverty threshold. We have to consider separately the French and the European non-French populations (see Table 7 in Appendix 6.2) because the corresponding living standards are different. The estimated poverty levels over all the Isère department are reported on Table 4. However, the juveniles in our database live mostly in urban areas, where the immigrant populations are more densely concentrated. Poverty levels estimations based on the urban population (under Police control, which surveys in France mainly towns and highly populated districts) are detailed on Table 5.

Table 4: Estimated percentages of children living below the poverty threshold in Isère according to their origin. The percentages of the EU population are the composition of the French children (11.3% living below the poverty threshold) and the EU non-French children (24% living below the poverty threshold).

	year		
origin	1982	1990	1999
TA (%)	42	43	39
EU (%)	58	57	61

Table 5: Estimated percentages of children living below the poverty threshold in areas of Isère under Police control (urban areas), according to their origin (See text and caption of Table 4 for details of the calculations).

	year		
origin	1982	1990	1999
TA (%)	51	55	55
EU (%)	49	45	45

Another estimation, based on data restricted to Grenoble – the Department's capital – and its surroundings, which concentrates 66% (1982), 63% (1990) and 62% (1999) of the Isère urban population (i.e. under control of the Police) is presented in

Table 6. Notice that although Tables 5 and 6 do not differ crucially from each other, there is a slightly higher concentration of TA juveniles in the largest city (including its surroundings) of the Department.

Table 6: Estimated percentages of children living below the poverty threshold in the area of Grenoble and surroundings under control of the Police, according to their origin

	year		
origin	1982	1990	1999
TA (%)	53	56	57
EU (%)	47	44	43

Strikingly, despite the relatively small proportion of TA juveniles in the average population (less than 20% between 1982 and 1999), they constitute roughly 40% of the juvenile population living below the poverty threshold in Isère. Restricting to the population of urban areas alone, the poverty rate of TA juveniles is dramatically larger: they represent more than half of the juveniles living below the poverty threshold.

In one of the rare scientific publications addressing the question of child poverty in France, Legros [36] points out that the risk of poverty among children is 2.2 percentage points above the level in the population at a whole, and that poverty is persistent: a majority of children living below the poverty threshold in 2006 also lived below it in the preceding two or three years. Thus, our poverty estimations for children in Isère, based on the above percentages, probably underestimate the poverty level of youngsters. Also, due to poverty persistence, the possible error introduced by our generalization of the percentages of 2007 to the period 1985-2005 should not modify our qualitative conclusions.

3 The offenders poverty level

Among the 1 478 convictions of our database, there are 677 passed on EU, 801 on TA, juveniles. Clearly, the relative proportions of offenses is extremely different from the proportions of EU and TA minors of the Isère Department. In this section we estimate their poverty level, based on their households compositions (number of adults and offenders' siblings) and estimated incomes.

The households

Only 1 461 records in our database contain information about the juveniles households. As expected for minors, most of them live either with their two parents, with one parent and a step parent or with a single parent; a small fraction live in other, mostly social, structures. In particular the majority (65.5%) of TA (but only 47.8% of EU) live with their two parents (see figure 5).

The parents: origin, profession and working status

The parents professions and working status help us to estimate the household income, which is needed to determine the poverty level of the offenders.

According to the rules specified in section 1.1, 19 records are classed TA based on the juveniles' nationalities, because we do not know their parents' birthplace. We know the origin of only one of the parents in 243 cases: 141 EU and 102 TA. For the 1 216 other judicial records we know the birthplace of *both* parents.

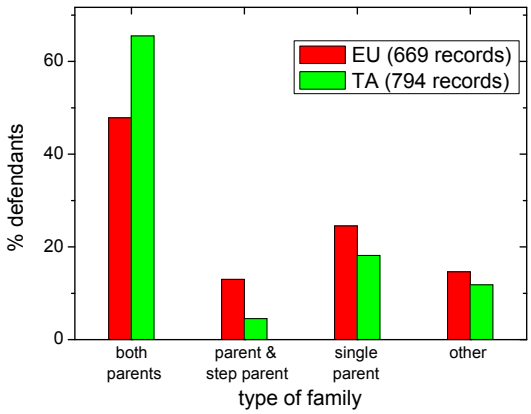

Figure 5: Sentenced offenders distribution according to the offender's type of family. Missing information for 10 EU and 7 TA.

The 1 216 known parental couples are extremely geographically endogamous: in the vast majority both parents are born in the same country. More precisely, there are 536 EU couples: 491 are endogamous (417 French and 74 of other European countries) and only 45 are mixed (with origins in two different European countries). Among the 680 known TA couples, 574 are endogamous, 17 are mixed with both parents of TA origin, only 89 are mixed TA-EU. These results are detailed on the Appendix. Due to this low mixity the classification into EU and TA based on the parents' birthplaces is certainly not very biased.

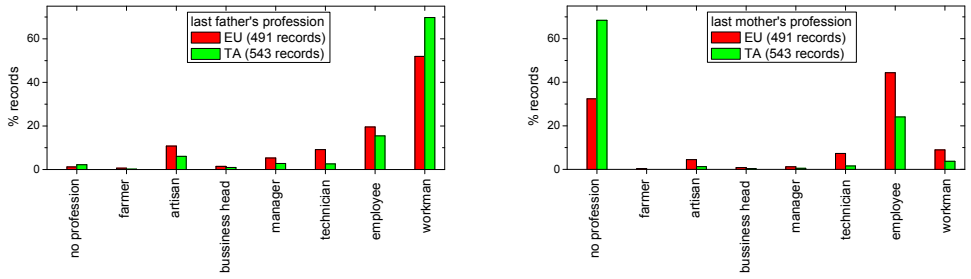

Figure 6: Distribution of the parents' professions

Most offenders' fathers are workers (52% of EU and 70% of TA), followed by employees (20% and 15% respectively). Less than 2% have high socio-professional situations. On the other side, 32% of EU (68% of TA) mothers do not have any profession; 44% of EU and 24% of TA are employees.

As shown on figure 7, 83% of the EU but only 63% of the TA fathers are employed

workers; 15% and 17% of TA fathers are retired and unemployed respectively, against 3% and 8% respectively for EU fathers.

Summarizing, TA fathers have on average less well remunerated professions, and are more numerous to be unemployed. Also, the mothers are less numerous to contribute to the household incomes.

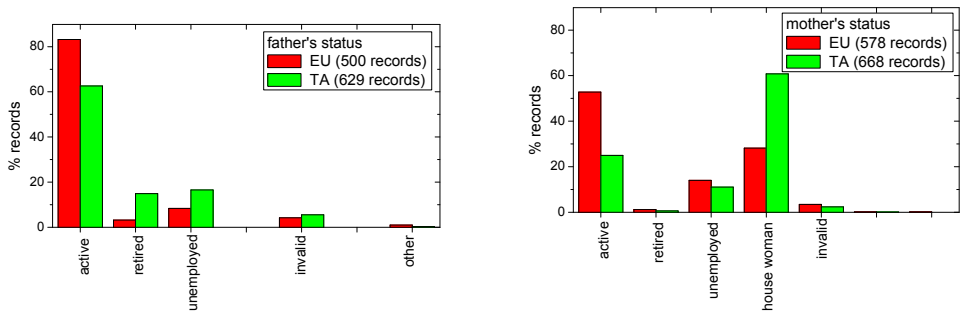

Figure 7: Distribution of the parents' working status

Number of siblings

Since the poverty level depends on the income per capita of the household, we need to consider the number of siblings of each offender.

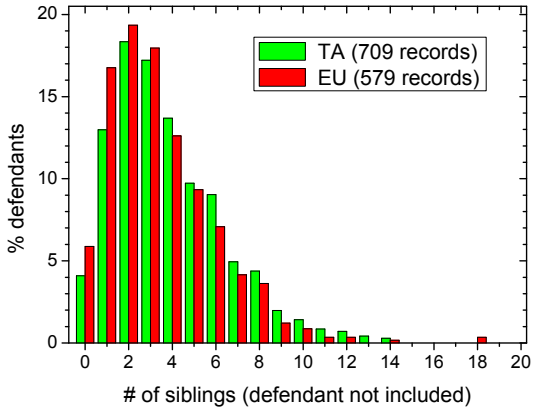

Figure 8: Offenders distribution according to the number of siblings

In contrast with the national census statistics, the average number of children in the offenders families is extremely large: 4.69 ± 2.58 (offender included). Offenders with TA origin have on average larger families than EU ones (TA: 4.9 ± 2.6; EU:

4.4 ± 2.5). The corresponding distributions are presented on Figure 8 (there are 98 EU and 92 TA missing values).

Estimation of the living standards

Most of the offenders in our database are school-children or apprentices. We do not know their incomes – if they have any – nor that of their families. However, from the information in our database, namely the parents' professions and status (employed, retired, etc), the number of adults in the household and the number of offenders' siblings, we are able to estimate the families' living standards.

We adopt as unit of wages the wage earned by workers with low professional level, and assume that workers of high socio-professional level earn 1.7 times the unit wage. These values correspond to the relation between the median and the first decile of the income distribution of immigrants in France in 2007 (see [35]). Notice that for non-immigrants this relation is 1.8. Our estimations are not sensitive to such small differences.

To estimate the offenders' living standards we attribute each offender's parent a professional level and a status. The professional level is a binary variable that depends on his/her profession: managers, artisans, farmers, shopkeepers and individuals having a qualified professional education are considered high-level. Less qualified workers are considered low-level. We assume that when employed, low-level professionals earn a unit wage, high-level ones earn 1.7 unit wages.

The professional status depend on the occupational level and allows us to estimate the individuals' incomes. Whenever there is some latitude to attribute incomes, we have chosen to assume maximal values, in order not to overestimate the poverty level. We have used the following criteria to attribute incomes based on the status:

employed or unknown : employed workers earn the wages that correspond to their professional level. When we do not know the status, we assume it to be "employed";

unemployed or retired : in France the Social Security provides help to unemployed, usually a fraction of the last wage, fraction that decreases with the time spent as unemployed. We assume that, irrespective of the time unemployed, the unemployment benefit is 75% (the legal upper bound) of the income when employed. Similarly, we assume that retired earn 75% of the salary corresponding to the professional level, which is a seldom reached upper bound;

other status : this covers mainly invalidity. We assume that the income is 50% of the corresponding professional wage when employed;

no profession a small proportion of persons do not have any profession; we assume that these, as well as the house-women, do not have any income.

The household income is estimated by adding the parents' (or the single parent) estimated incomes. We did not include possible welfare payments; some are proportional to the number of children in the household, others depend on the family's situation. Since the other incomes (detailed above) have generally been overestimated, we decided not to include welfare.

The number of consumption units, proportional to the household's size, is calculated as follows: the first adult counts for 1 consumption unit, the second (if there is any) counts for 0.5. Children below 14 years old should count for 0.3, older ones for 0.5. Since we do not know the ages of the offenders' siblings, half of the siblings are given 0.3 units and the others 0.5 units. The offender is counted according to his age.

We determine an index that reflects the delinquent living standard by dividing the estimated household income (in our wage units) by the number of consumption units. In the cases where we do not know the number of siblings we assume that the offender is the only child in the household, thus overestimating the offender's actual living standard. Consequently, the number of offenders living below the poverty threshold are probably larger than our estimations.

We have the necessary information for only 1 130 records (522 EU, 608 TA). Figures 9 present the results in our arbitrary units. As explained in the preceding section, we estimate that those offenders with a living standard below 70.9% of the minimal wage live below the poverty threshold. The minimal wage in France in 1999 was slightly higher than 1 000 euro (precisely 1049 euro) per month; an order of magnitude of the living standard (in euro of the year 1999) of the children in our database may thus be obtained by just multiplying the x axis values by 1 000. Notice that, since our monetary unit is the minimal wage, our results do not depend on the drift of the minimal wages' monetary value through time.

According with our estimates, both EU and TA offenders' populations are very poor, the latter being poorer than the former, as may be seen through comparison of the cumulative distributions, figure 9 (right): 85% of the EU, 96% of the TA, live below 70.9% of the assumed monetary unit (the official minimal wage). Had we include welfare payments, our living standard estimation would be on average $\approx 9\%$ larger. Correspondingly, the cumulative distribution would be shifted $\approx 9\%$ to the right, and the corresponding percentages of EU (resp. TA) living below the poverty threshold would be slightly lower: 81% (resp. 93%).

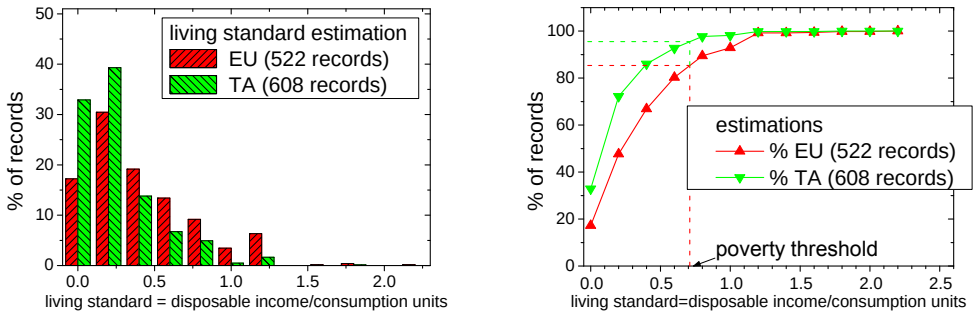

Figure 9: Left: Families estimated living standard distribution (see text). Right: Cumulative living standard distribution; the poverty threshold of 70.9% of the minimal wage (see section 2) is indicated.

Given the imprecision of our information, we may conclude that a large majority – if not all – of the offenders in our database live below the poverty threshold, TAs being poorer on average than EUs.

4 Delinquency and poverty

In this section we present our main result.

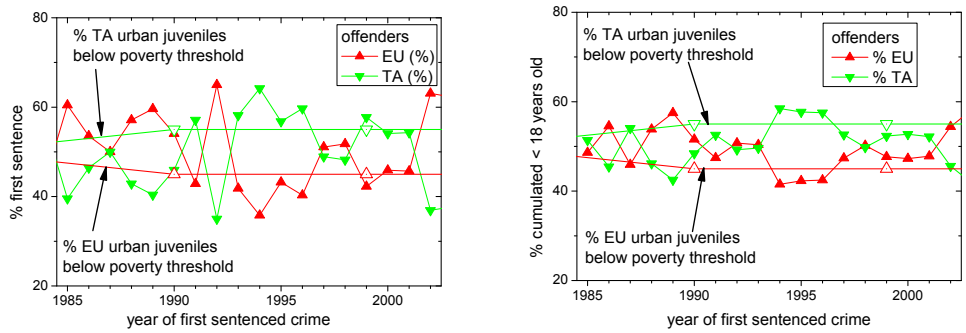

Figure 10: Proportions of TA and EU offenders (see text for the meaning of the two different representations), and proportions of TA and EU juveniles in urban regions in Isère living below the poverty threshold, as a function of the year when the first crime is committed.

We find that the number of EU and TA juveniles convicted of serious crimes in Isère are of the same order. Based on information grasped from the corresponding judiciary files, we determined in section 3 that the delinquents overwhelmingly belong to very poor families, mostly living in urban areas.

In section 2.2 we estimated the composition of the Isère's population living below the poverty level. Strikingly, when restricting to the juvenile urban population, the proportions of European and (EU) and African-Turkish (TA) youngsters in Isère are similar.

Figure 10 summarizes our results. We represented the percentages of EU and TA delinquents in our database as a function of the year when the first sentenced crime has been committed[10]. Our representation is redundant for the sake of clarity, since we represented the two components (EU and TA) which are complementary (they add up to 100%). On the same figures we represented the estimated percentages of juveniles living in urban areas in Isère, given in Table 5 (with a linear extrapolation after 1999). Delinquents are counted using two different criteria, that give both similar results:

- left figure: we represent the number of first sentences (to avoid double counting of recidivists) as a function of the year of the corresponding crime. Thus, each juvenile is counted only once, and appears in the representation the year of his/her first crime that has been sentenced.
- right figure: each sentenced juvenile is counted as a delinquent between the year of the first sentenced crime until his/her 18th anniversary. The corresponding data (labelled *cumulated* < 18), corresponds to the assumption that once a juvenile entered crime he/she remains a juvenile delinquent until majority.

Obviously, the second way of counting has less fluctuations than the first one. It is remarkable that both ways of counting criminals present very similar patterns: both EU and TA present fluctuations but remain close to the corresponding lines of poverty, some years below and others above these lines.

[10]We only consider crimes committed before 2003 to get rid of fluctuations imputable to the justice system (crimes committed after 2002 may not have been elucidated nor judged by 2005).

5 Discussion and conclusion

In this paper we investigated whether delinquents belonging to stigmatized minorities are actually overrepresented in crime. Based on 20 years of sentenced serious crimes data in Isère (France), we compared the proportions of delinquents of European origin (EU) to those belonging to stigmatized minorities of African-Turkish origins (TA), taking into account their socioeconomic characteristics. Our estimations of the living standards of the delinquent population show that more than 90% of them (precisely 85% of EU and 96% of TA) live below the poverty threshold. Thus, one should compare the proportions of delinquents of different origins to their share among the poorest population.

To this end we first estimated the relative proportions of minority and majority juveniles living below the poverty level in urban and non-urban zones of Isère combining census data with economic poverty rates of the different subpopulations. According to our estimations, the juvenile population of Isère living below the poverty threshold in urban areas is composed of almost equal parts of EU and TA, the same proportions found in our delinquents' database.

Our analysis sheds some light on the long lasting and often emotional debate about the relation between immigration and criminality. More precisely, our data, that correspond to the period 1985-2005, show that

1. the number of sentenced offenses increases linearly through time, offenses committed by EU juveniles increase with a rate of about 1 per year while those committed by TA offenders increase at a rate of slightly more than 2 per year,
2. the larger rate of offenses committed by TA offenders is exclusively due to the activity of TA recidivists, that are more numerous than EU ones, since when we count offenders (and not sentences) both TA and EU youngsters are present in similar proportions in the course of the 20 years covered by the data,
3. the juvenile delinquents population is composed of about 50% of EU and 50% of TA offenders, without significative variations through time,
4. this ratio 50/50 is similar to the estimated ratio of EU and TA in the urban juvenile population of Isère living below the poverty threshold[11].

These conclusions are based on several hypothesis that seem quite reasonable, but would need further justifications:

1. our data correspond to very serious offenses, and it is unclear whether their statistics may be generalized to other types of crimes,
2. our data correspond to elucidated and punished crimes, which are a small fraction of all the crimes, whose number may be estimated according to victimization records; nothing can be said about authors of non-elucidated crimes,
3. our measure of recidivism is certainly a minorant because, as with the offenses themselves, it corresponds to past convictions, and not to past crimes. This drawback is systematic in all the criminological studies because only elucidated crimes are ascribable to the offenders. Unpunished crimes are thus not counted
4. our evaluations of poverty levels in Isère (our reference population) are based on poverty percentages of 2007, that we have extrapolated to all the period

[11] Note added in proof: Based on the TeO database, Michèle Tribalat (private communication) finds that 51% of the juveniles younger than 18 years old with a living standard of less than 11 606 euro/year (the 5% poorest population) are TA.

under study; our estimations, difficult to verify because there is no other official statistics on the subject, are justified by the persistence of poverty [36],

5. our estimated poverty levels are probably underestimated because they do not take into account the fact that children average poverty is larger than that of adults [36].

An interesting observation grasped from our data is that recidivism is more frequent among the minority offenders. One has to keep in mind that our data, which correspond to *elucidated* crimes, show that the proportion of first sentences meted out to EU and TA delinquents, as well as their corresponding ages, are roughly the same. This opens a new question: one may wonder whether TA juveniles – more numerous than EU ones among the recidivists – are intrinsically more active or whether the justice system selectively surveys minority delinquents when elucidating new crimes.

The main conclusion of our study is that over-representation of stigmatized minorities in crime is only apparent: poverty and urban environment are enough to explain it. When one compares populations with similar living standards, the proportion of juvenile offenders that belong to stigmatized minorities is similar to their share in the urban juvenile poor population.

This does not mean that poverty and urban environment are the unique determinants of criminality (needless to say that delinquents are a small fraction of the population – even among those living below the poverty level), but rather that there is no need to invoke other determinants to explain minority over-representation.

Acknowledgements

We are grateful to Michèle Tribalat and Bernard Aubry for communicating us the data of the SAPHIR database, and for useful discussions and critical reading of the manuscript. The estimations and findings in this paper are those of the authors and do not necessarily reflect their views.

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6 Appendix

6.1 Endogamy of parental couples in our database

The details of the composition of the offenders' parental couples in our database are given in figure 11

6.2 Detailed populations

The numbers of juveniles in Isère used in our estimations of poverty are detailed on Table 7

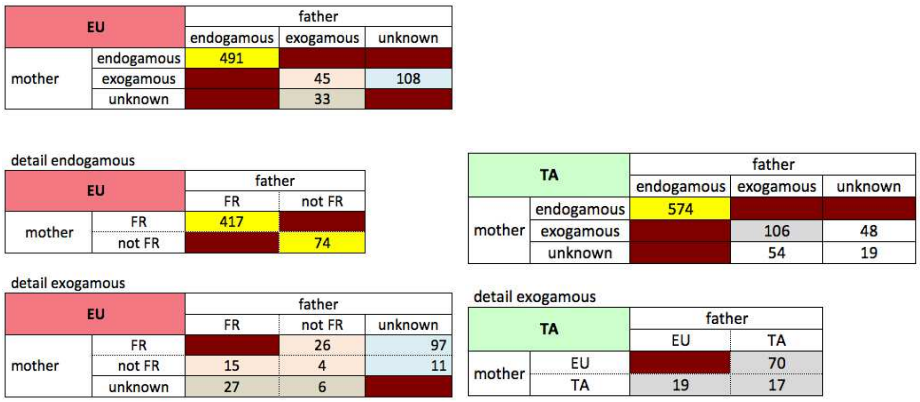

Figure 11: Mixity of parental couples. Left: numbers of endogamic and exogamic couples, among the parents of EU juveniles (unknown: origin unknown). Right: The same for TA couples. Dark purple cells: impossible combinations.

Table 7: Number of children of according to their origin in Isère (global), and the composition of urban and non-urban areas. The number of children neither EU nor TA (other origins, excluded in our calculations of percentages) are detailed. Consistently with our definitions, the French population repatriated from the former colonies are included in the TA subpopulation.

		year		
		1982	1990	1999
global	TA	45 688	45 908	38 748
	EU non FR	37 032	30 012	21 673
	EU	199 304	197 100	206 181
	excluded	1 912	2 696	3 219
urban	TA	21 544	19 848	16 950
	EU non FR	15 396	9 904	6 030
	EU	60 600	49 336	45 969
	excluded	1 184	1 212	1 504
non-urban	TA	24 144	26 060	21 798
	EU non FR	21 636	20 108	15 643
	EU	138 704	147 764	160 212
	excluded	728	1 484	1 715