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Parental separation and children's educational attainment: Heterogeneity and rare and common educational outcomes

Abstract:
While the association between parental separation and children's lower educational achievements is a robust finding, the evidence regarding its heterogeneity across social groups is mixed. Some studies show that socioeconomically advantaged families manage to shelter their pupils from the consequences of parental break-up, while others find the opposite. We contribute to this debate and sketch a structural theory of the heterogeneity of the consequences associated to parental separation on children's educational outcomes. We argue that the separation penalty and its heterogeneity across social backgrounds differ depending on the selectivity of a given educational outcome. In particular, the smallest penalty will be observed for very rare and very common outcomes. The rarity of an educational outcome depends on pupils' social background, which might produce the observed heterogeneity even if the separation penalty itself is equal across parental social background.
We investigate the heterogeneity of the consequences of separation by parents' education in Spain on two children's outcomes. One outcome (enrolment in tertiary education) is rare for children in low educated families, while the other (retaking in primary and secondary education) is rare for children in highly educated families. The results show that the penalty associated to parental separation for retaking a year in primary and secondary education is larger for children of low educated mothers. No heterogeneity is found for enrolment in tertiary education.

Key words: parental separation, diverging destinies, heterogeneity, rare and common educational outcomes

1. Introduction

When compared to children raised in two-parent families, children from non-intact families tend to fare worse across a host of short- and long-term indicators of achievement and wellbeing (Amato 2000, 2001; Dronkers/Harkonen 2008; McLanahan et al. 2013). The negative consequences of parental separation on children include short-term increases in physical and psychological distress and decreases in interpersonal wellbeing and longer-term reductions in relationship stability, educational achievement and economic security

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(Amato 1994). The associational evidence of the nexus between parental union dissolution and children's lower achievements is quite robust across countries and time. It was on the basis of this evidence that McLanahan's (2004) formulated her famous 'diverging destinies' thesis, suggesting that family instability that is more common among low educated mothers critically contributes to the disparities in children's access to resources and in their later socio-economic outcomes.

More recent studies have turned to the investigation of whether the consequences of family disruption for children differs across social groups, asking whether some groups are better equipped than others to deal with them. Some studies show that socio-economically advantaged families manage to buffer their offspring from the negative consequences of union dissolution (Albertini/Dronkers 2009; Bukodi/Dronkers 2003; Gratz 2015; Fischer 2007; Lampard 2012), while other studies find the opposite, namely that children from socio-economically advantaged families suffer a larger separation penalty (Kalmjin 2010). It has variously been suggested that the divide in the literature is due to the different contexts or cohorts studied, the choice of different child outcomes, the way some key variables such as parental social origins/union dissolution are operationalized and/or the measurement of the differentials in relative or absolute terms (Bernardi/Boertien 2017a; Härkönen et al. 2017).

This paper makes three main contributions to the literature on the consequences of parental union dissolution. First, it tests one of the core argument in McLanahan's (2004) 'diverging destinies' thesis. In her original formulation, for such a thesis to hold there should be a negative socio-economic gradient in family instability (i.e. lower socio-economic groups should be more likely to experience family disruption). Moreover, family instability has to entail a penalty in terms of children' educational and socioeconomic attainment. An additional factor generally overlooked by previous studies is that even if the two previous conditions hold, family structure might not contribute to inequality of opportunity if the separation penalty is larger for children of socio-economically advantaged families, when compared to children from the lower social strata (Bernardi/Boertien 2017b). This is because, if the family instability penalty is larger for the higher socio-economic groups, opposite processes can cancel each other out. The effect on socio-economic inequalities due to the larger prevalence of family disruption among the lower strata could be off-set by the larger penalty in terms of the educational and socioeconomic attainment that is experienced by children of higher social strata. Additionally, one might note that the diverging destinies thesis would also hold in a situation where there is no socio-economic gradient in family instability but the size of the separation penalty is larger for children of lower socio-economic strata[1].

Investigating the heterogeneity of the family disruption penalty represents, then, a salient test of the diverging destinies thesis. In the present article, we analyze the existence of a separation penalty in Spain and its heterogeneity across socioeconomic groups. The second contribution is that we assess the existence of a penalty on two different educational outcomes in Spain: retaking one year in primary and secondary education and enrollment in tertiary education. What is relevant here is that one outcome represents an ed-

1 Note that this specific situation was not discussed in McLanahan's (2004) original formulation of the 'diverging destinies' thesis.

ucational success (enrollment in tertiary education) and one represents an educational failure (retaking). Previous work on the heterogeneity of the consequences of parental separation for children outcomes by parental socio-economic status have indeed shown that the results change depending on the outcome considered. We will argue that the distinction between outcomes in terms of success and failure might be crucial to understanding the inconsistency of findings in the literature on the heterogeneity of the penalty of parental separation.

Finally, this study focuses on a largely under-investigated context in this literature: Spain. Research on the consequences of parental separation is mostly concentrated on the US (Biblarz/Raferty 1999; McLanahan/Sandefur 1994; Augustine 2014) and on Northern or Continental Europe (Sigle-Rushton et al. 2005; Mandemakers/Kalmijn 2014; Bernardi/Boertien 2016; Engelhardt, Trappe/Dronkers 2002; Gratz 2015; Gahler/Palmtag 2014; Gahler/Harkonen 2014). In contrast, while empirical research on Southern European countries is still rare (for an exception see Albertini/Dronkers 2009). The Divorce Law in Spain was enacted only in 1981, relatively late compared to other western countries, and still two decades after the law was passed, the divorce rate was, as in other Southern European countries, well below that of other western countries. Divorces remained rare until the early 2000s when the Express Divorce Bill was passed, making legal separation easier and faster. After 2005, the rate of separation increased so rapidly that today, only a decade later, Spain resembles a Nordic European country more than a Southern one in terms of the divorce rate. Moreover, other institutional factors, such as the lower cost of higher education in Spain compared to other countries might reduce the differentials across family background of the family instability effect on pupils' transition to tertiary education[2]. Our study therefore also contributes to answering the question of how institutional features might buffer the consequences of family instability.

2. Background

2.1 The union dissolution penalty in children education and its heterogeneity across socio-economic groups

Research interest in how family structures are related to children's life chances has been extensive. In particular, literature addressing the consequences of parental separation on children outcomes has flourished in the last decades (Amato 2000, 2001; Blossfeld et al. 1995; De Graaf/Kalmijn 2006; Härkonen/Dronkers 2006; Härkönen et al. 2017; Hoem 1997; Jalovaara 2003; Kalmijn 2010; Lyngstad 2004; Matysiak et al. 2014). The experience of parental union dissolution has been shown to be associated with short-term increases in physical and psychological distress and decreases in cognitive development and interpersonal wellbeing, and longer-term reductions in relationship stability, educational achievement and economic security (Amato 1994). The reduction in time and resources

2 In this article when we use the term "effect" without a strict causal interpretation. We discuss below issues related to the endogeneity of parental separation.

from the non-resident parent is considered one explanation for the lower achievements of children after parental separation (Albertini/Dronkers 2009). Other mechanisms include the distress and conflict leading to and produced by the separation; the change in parenting style following separation (Amato 1994, 2000) and the decline in economic resources following a divorce or separation (Albertini/Dronkers 2009; Astone/McLanahan 1991, McLanahan 1999).

Recent studies have also focused on the heterogeneity of the separation penalty among children from different socioeconomic background (Albertini/Dronkers 2009; Bukodi/Dronkers 2003; Fischer 2007; Lampard 2012; Bernardi/Boertien 2016; Härkönen et al. 2017; Kalmjin 2010). The hypothesis is that some groups might be better equipped to deal with the consequences of family disruption. However, empirical evidence in this respect is mixed. Some studies show that the largest negative effects of separation are found among disadvantaged families (Albertini/Dronkers 2009; Bukodi/Dronkers 2003; Fischer 2007; Gratz 2015; Lampard 2012; Mandemakers/Kalmijn 2014). For example, Lampard (2012) shows that in non-intact British families, the occupational position of their offspring is negatively affected by parental separation when parental education is low. Albertini and Dronkers (2009) find that in Italy children of low educated divorced parents fare significantly worse compared to children of low educated intact couples, while children of highly educated parents (whether separated or married) do not differ in a significant way. Similar results in terms of mothers' education moderating the negative effects of divorce for children's educational attainment are found in a study on Hungary by Bukodi/Dronkers (2003). Gratz (2015) finds that parental break-up negatively affects school grades and the probability of attending upper secondary education in Germany only for the children of low educated parents.

Low socioeconomic status parents supposedly lack the necessary social and cultural resources to manage the negative consequences of separation such as parental conflict, the loss of support from the wider family, the partial loss of authority and the lower quality of socialization (Albertini/Dronkers 2009). Furthermore, the financial burden of a divorce weights more on the limited budget of low socioeconomic status families, which translates into fewer economic resources being devoted to children's education, compared to the high socioeconomic status families. The argument echoes that by other studies in social stratification research focusing on how families with different socioeconomic background deal with adverse events affecting children's lives. These studies find a compensatory effect that allows socio-economically advantaged families buffering the consequences of these negative events on their children's future achievements (Bernardi 2014). Highly educated parents, for instance, more frequently help children with their homework or can afford to pay private lessons to compensate for children's low performance at school (Bernardi/Gratz 2015). Similar compensatory mechanisms might be at play when the problematic event is parental separation.

On the other hand, some studies find that the separation penalty is smaller among children from lower socioeconomic origins (Beller 2009; Bernardi/Boertien 2016). Early studies conducted on the US show that parental separation fosters intergenerational mobility by reducing the transmission of resources from parents to children (Biblarz/Raferty 1999). Since the transmission is normally larger for children of high socioeconomic status parents, the latter are hypothesized to suffer more from parental separation compared to

children of low socioeconomic status origin. With slight variants, then, the smaller penalty that some studies find for children of low SES families in case of separation is interpreted as a floor effect. For children from low social origins, the difficulties of reaching higher level of educations are already very large and the added negative effect of separation is smaller (Bernardi/Radl 2014; Klamjin 2010).

2.2 The heterogeneity of the union dissolution penalty: why the type of outcome matters

The inconsistent results that point in some cases to a compensatory effect and in other to a floor effect of parental separation might be reconciled if one distinguishes among different child outcomes. In particular, in the case of dichotomous outcomes, the notion of threshold is relevant[3]. One can assume that children are distributed along an unobserved continuous distribution that reflect the propensity of a given outcome, such as enrolling at university. If their propensity is above a given threshold, they make the transition (i.e. they enroll at the university) otherwise they do not. One can further assume that a parental union separation entails some negative consequences for children (stress, losses of economic resources, losses of parental time etc.) that push the unobserved propensity of a given outcome down. What then becomes crucial is where children are located in the propensity distribution and whether the parental separation pushes them below the critical threshold. If the children are predominantly already located much below the critical threshold, the consequences of a separation will be minimal. Similarly, if they are located far above it, the consequences will also be minimal. Conversely, the consequences of separation will become most visible when children are located in the proximity of the threshold. In those cases, a parental separation might more consequential because it might push the children below the threshold.

In this respect it is relevant to consider how extreme the threshold is, i.e. the level of selectivity of a given outcome, and consequently how "rare" an educational outcome is. If one further assumes that the propensity of a given outcome is normally distributed, when the threshold is extreme and thus outcome is "rare", only few individuals are located in the proximity of the threshold. In this case the negative consequences of parental separation will be smaller. On the contrary, the largest parental separation penalty should be observed when the probability of the outcome is 0.5 and the threshold divides the population in two equal groups, 50% who attain the outcome and 50% who do not. Critically, the rarity of an outcome depends on the socio-economic conditions of the family of origin. In general, an educational failure (such as failing to complete high schools) is rare outcome for students from high SES families, while an educational success (such as achieving a university degree) is a rarer outcome for students from low SES families.

The prediction then that one can formulate based on the notions of threshold and selectivity associated with a given outcome is that the negative consequences of a parental separation are weaker for students from high SES families compared to those from low SES families, when the outcome of interest is an educational failure. This is because edu-

3 We thank one of the anonymous reviewers for pointing us the usefulness of this distinction out and encouraging us to elaborate on it.

cational failure is a rare outcome for high SES student and the largest majority of them are far above the underlying threshold to experience any consequence in case of parental separation. A larger penalty is, however, more likely to manifest for students from high SES families in case of an educational success because some of those who were close to the threshold might fall below it. The opposite pattern can be expected for students of socioeconomically disadvantaged families. They are more frequently just above the threshold of an educational failure outcome and more frequently much below the threshold of an educational success outcome. In their case, a stronger penalty associated with parental separation should be observed for educational failure and weaker one for educational success. The important implication of this line of argument is that although the penalty might be the same, its consequences might may still vary depending on the unobserved distribution with respect to the threshold for a given educational outcome.

This argument in terms of threshold has already been outlined in Bernardi and Boertien (2016), who show that in the UK the separation penalty in tertiary education attainment is twice as large for the children of highly educated parents compared to the children of low educated parents. Moreover, the authors find that this heterogeneity is due to the larger decline in family income after separation in families with highly educated parents. Most importantly, they also show that the same decline in income is more detrimental for the educational attainment of children in highly educated families because they lie on a part of the income distribution where a change in family income is more strongly associated with tertiary education attainment.

Finally, although for the sake of brevity we cannot provide a systematic review of all the previous findings, the theory sketched in this section, based on the idea of threshold (i.e. different level of selectivity of different educational outcomes), seems to be consistent with the opposite patterns of heterogeneitiy in the family instability penalty found, for instance, in Bernardi and Radl (2014) and Grätz (2015). Bernardi and Radl (2014) study the probability of tertiary education attainment, and thus an educational outcome with a relatively high critical threshold and relatively rare occurrence for children of low SES families. In line with the argument proposed above when the educational outcome is a success, they find that the average family instability penalty is lower for children of low educated parents. Grätz (2015) analyses the probability of attending the upper track in secondary school (Gymnasium) in Germany. Failing to enroll in the academic track is relatively rare outcome for children of highly educated parents[4] and Grätz (2015) finds no negative consequences of parental separation for them.

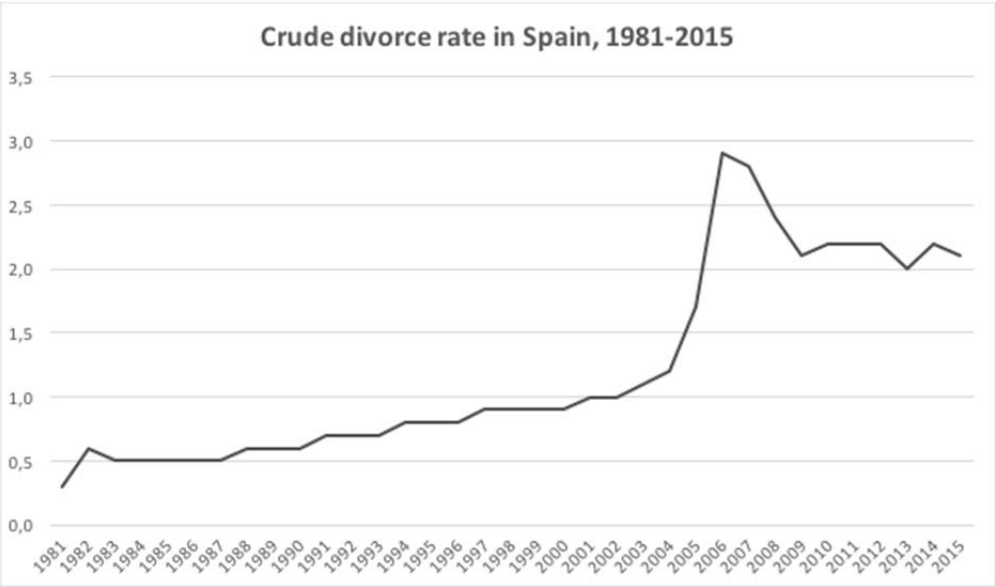
2.3 Spanish context

Most of the existing studies on the intergenerational effects of union dissolution on children are conducted in the USA or in Northern and Continental European countries. Very few papers investigate the issue in Southern European countries (Albertini/Dronkers 2009). The differences between these contexts are numerous in terms of welfare, educa-

4 The proportion of children born between 1983 and 1993 (roughly the same years considered in Grätz 2015) whose parents have an Abitur (the certificate to access higher education) and achieve themselves an Abitur is between 70 and 75% (Klein 2018) for children of highly educated parents.

tional systems, family and social norms, and the diffusion of divorce and separations (Härkonen/Dronkers 2006; Coppola/Di Cesare 2008). It is difficult to generalize the results obtained in other contexts to a country like Spain, which passed the Divorce Law only in 1981 but subsequently saw a very steep increase in divorce rates since then, especially after 2005 when the Express Divorce Bill making separations easier was passed (see Figure 1). Unfortunately, more general statistics including union dissolutions after cohabitation, the focus of this paper, are not yet available for Spain. However, Figure 1 suggests that, during the period under analysis in this paper (children born between 1965 and 1994, see more details below), Spain was still in the early stages of the diffusion of divorce. This coupled with an educational gradient that was still positive (Härkonen/Dronkers 2006) suggest that in Spain the largest separation penalty would be borne by children of low educated parents. Compared to countries like Finland and the UK, parental separation is still rare and financially expensive. The cost of union dissolution weighs more on the budget of lower socioeconomic strata of the population. Moreover, being union break-ups more common among highly educated couples in the period under analysis, the selection mechanism still work in favor of them. The few lower educated partners who break-up might be those with very troubled relationships, with the highest conflict and the lower inter-relational skills to deal with problems within the couple.

Figure 1: Crude divorce rate in Spain, 1981-2015



Source: Elaboration of the authors based on Eurostat data.

The educational system in Spain is fundamentally comprehensive and cost-free (Calero 2005). Primary education (Colegios de Educación Primaria) comprises 6 years (6-12 years old) and lower secondary education comprises an additional 4 years (Educación Secundaria Obligatoria, age 13-16) after which compulsory education ends. Upper sec-

ondary education is either academic or vocational (Bachillerato or Formación Profesional de Grado Medio) and lasts two years. Tertiary education also comprises both academic and vocational tracks (Formación Profesional de Grado Superior, Diplomatura, Licenciatura, Grado, Máster or Doctorado). The separation between academic and vocational tracks in Spain thus takes place relatively late, at 16-year-old (OECD 2012). Nevertheless, Spain is characterized by low levels of post-compulsory education participation and especially low rates for children from low socioeconomic or immigrant origins (OECD 2012; Azzolini et al. 2012; Fernández-Mellizo/Saturnino 2017). The rate of retaking, particularly during compulsory education, is large and higher than the EU average. Retaking happens when a student fails to achieve a minimum level of proficiency in a given number of key subjects. Only half of students manage to finish compulsory lower secondary education without repeating at least one year and the majority of the retaking takes place in the first and third year of ESO (Educación Secundaria Obligatoria) when the pupils are 12-16 years old (Carabaña 2017). Retaking has long-term consequences for students: the risk of dropping out with only secondary education or even before is much higher among those who have repeated one year (Calero 2005). Among those who enter upper secondary education the largest majority also enter university. In other words, the transition from compulsory to non-compulsory education is the critical hurdle within the Spanish educational system. Those who manage to overcome it are also likely to access tertiary education. University fees are comparatively low and publicly subsided. The drop-out rates among those who enroll at university is also relatively low, when compared to other OECD countries (OECD 2013: 8). As a result, the educational distribution is polarized (Gradin 2000; Ballarino et al. 2008): Spain has very high rate of lower secondary educated or less, but also comparably high level of university degree holders, when compared to other OECD countries (OECD 2014a, 2014b).

The implication for our study is that the negative association between union dissolution and retaking, on the one hand, and entering to university, on the other hand, are likely to be different. The smoother transition from upper secondary to tertiary education, and the very low cost of university would suggest that, contrary to other context where university fees are very high such as the UK, the heterogeneity in the separation penalty across socioeconomic groups on the "good" outcome (university attendance) would be lower in Spain. The penalty is expected, instead, to be larger and more heterogeneous across parental resources on the "bad" outcome, namely on years' repetition during compulsory education. According to the official statistics presented above, retaking is disproportionately more common among pupils coming from disadvantaged families. Since parental separation is a form of disadvantage that accumulates with other economic or social disadvantage, we expect the association between union dissolution and children's probability of retaking to be larger among families with low educated parents.

3. Data, variables and method

The dataset we use is the 2013 Encuesta Social General Española (ESGE) conducted by the Centro de Investigaciones Sociológicas (CIS). A representative sample of Spanish 18+ residents was interviewed during 2013, reaching a total sample size of more than 5,000

individual respondents[5]. This survey collected detailed information on respondents' educational outcomes (years' repetition and educational attainment) on parents' characteristics (e.g. education, marital history).

We restrict the analysis to the respondents born after 1965, namely those respondents who were 16 or younger in 1981, to limit as much as possible the selected group of parents who divorced before the Divorce Law of 1981. We also restrict the sample of respondents to children born to Spanish mothers. Our final ESGE sample is composed of 2,240 respondents born between 1965 and 1994 (aged 19-48 at the time of interview), among whom 114 experienced parental separation (around 5% of the sample) including both legal divorces after marriage and separations after cohabitation. We acknowledge that the sample size is small and that the number of parental separations is critically low. For this reason, we cannot distinguish between legal divorce after marriage and other separations and, besides parental separation and the educational level of the parents, it would not be possible to divide further the sample to investigate the impact of other characteristics of parents and children (e.g. respondents' age at parental marital disruption, respondents' sex, parental occupation). These data limitations are typical of studies of marital disruption in countries where divorce is a rare event as Spain (Albertini/Dronkers 2009).

Table 1 reports the distribution of the independent and dependent variables. The main explanatory variable, parental separation is operationalized with a dummy variable that takes value 1 if parents separated or divorced before age 16. For descriptive purposes we report the distribution of the age of the respondents at parental separation. Among the 114 cases of parental separation[6], 75% (86 cases) happened when children were younger than 12. We focus on two child educational outcomes: the repetition of at least one year during primary or secondary school and whether the respondent ever enrolled in tertiary education. The former (repetition) can be considered a "bad" educational outcome, while the latter (university attendance) a "good" one. About one third of the respondents in the sample repeated at least one year in primary or secondary school and about one third have ever enrolled at the university. Since we do not know in which educational cycle the repetition took place, in principle, it could happen before parental separation. However, as described in section 2.3 most of the retaking takes place in ESO, when pupils are 12-16 and there is very low repetition before and especially after that age. In contrast, we showed in Table 1 that the majority of the parental union dissolutions take place when the children were below 12. The likelihood that repetition happens before parental separation is thus of low concern. We do not limit the sample to union dissolutions that happened before the age of 12, so as not further reduce the number of parental breakups that is already extremely low. We are sufficiently confident that we measure parental separation before retaking eventually takes place.

Parental education – our proxy for the socioeconomic background of the family – is either the father's or the mother's educational attainment and it is operationalized as a categorical variable of low (primary or lower secondary), middle (upper secondary) and high (at least some tertiary). Table 1 shows that Spanish mothers are, on average, slightly less edu-

5 For more information on sampling procedures, response rate and characteristics of the survey please visit http://www.cis.es/cis/export/sites/default/Archivos/Marginales/2960_2979/2975/IM2975_ESGE.pdf.

6 We still have 18 separations happening before 1981. We did not exclude them to not reduce further the number of events of interest. We believe results are not driven by these very few cases.

cated than fathers, with three quarters of mothers having only lower secondary education at maximum and less than 10% having tertiary education (*versus* 14% of fathers).

The additional control variables included in the models are typical of analyses of educational outcomes. The respondent's year of birth (linear, centered around the mean, 1978) as educational attainment varies over cohorts; the sex and number of siblings (only child, one sibling or two or more) since school performance is usually higher for girls than boys and parental resources are diluted among siblings (Downey 2001). Furthermore, we control for the size of the city where the respondent lives and we add a dummy for the Autonomous Community where s/he resides since the risk of repetition varies remarkably across communities in Spain (Bernardi 2012). Finally, we control for whether parents were working when s/he was 16 years old. The distribution of these variables is also reported in Table 1. Interestingly, almost half of mothers were working when the respondents were growing up. Among the working mothers, 8% separated in contrast to the 2.3% separating among non-working mothers (not shown). To put in another way, among the mothers who separated, three quarters were in the labor market. Looking at their educational levels, we see that separated women tend to work more often if low educated. We cannot identify whether these women were working before the union dissolution or started working after separating. To the extent, however, that labor market participation can be an antecedent of parental separation and it might also affect children's educational outcomes, we include it as a control variable in the analyses.

Table 1: Descriptives. Respondents born after 1965 to Spanish mothers

Independent variables	**#**	**%**	**Total**
Parental separation	**114**	**5.1**	**2240**
Mother education:			
Primary or lower secondary	1359	74.3	
Upper secondary	293	16.0	
Tertiary	177	9.7	1829
Father education:			
Primary or lower secondary	1246	68.3	
Upper secondary	324	17.7	
Tertiary	255	14.0	1825
Female Respondents	1153	50.4	2286
Number of siblings			
R is the only child	292	12.8	
One siblings	1323	57.8	
Two siblings or more	672	29.4	2287
Working mothers when R was 16	1076	48.0	2240
Working mothers and separated	86	8.0	
Working and separated, Primary or lower secondary	50	4.6	
Working and separated, Upper secondary	19	1.8	
Working and separated, Tertiary	7	0.7	
Working and separated, missing education	10	0.9	
Working fathers when R was 16	2027	93.3	2173
R lives in a city with more than 400000 inhabitants	317	16.2	2287
Dependent variables	**#**	**%**	**Total**
R repeated one year in primary or secondary school	860	38.2	2250
R enrolled or attended university	779	34.4	2263

Source: Elaboration of the authors based on ESGE 2013.

Table 2 shows the distribution of parental separation by mother and father's education. The highest proportion of separating parents in our sample is present among mid-educated mothers and fathers. In line with previous findings (Coppola/Di Cesare 2008, Harkonen/Dronkers 2006) the educational gradient of union dissolution in Spain for parents of children born between 1965 and 1994 is still slightly positive and has not yet reversed. More than 9% of upper secondary educated mothers separate against less than 5% in both lower and higher educational groups. The distribution is more even across fathers' educational groups, where upper secondary and tertiary educated are more likely to experience union dissolution compared to low educated fathers.

Table 2: Parental separation by parents' education

	Parental separation		**R repeated one year**		**R enrolled in university**	
	#	%	#	%	#	%
Mother's education:						
Primary or lower secondary	62	4.6	514	38.4	413	30.7
Upper secondary	27	9.3	84	29.0	164	56.2
Tertiary	8	4.6	28	15.9	136	77.3
Tot.	97		626		713	
Father's education:						
Primary or lower secondary	50	4.1	484	39.3	355	28.6
Upper secondary	19	5.9	107	33.3	162	50.5
Tertiary	13	5.2	50	19.9	190	75.1
Tot.	82		641		707	

Source: Elaboration of the authors based on ESGE 2013.

Table 2 further reports the distribution of the educational achievements of children by parental education. The distribution is similar whether we look at mother's or father's education: educational outcomes are far better among children with highly educated parents compared to low educated. Around 16-20% of respondents with tertiary educated parents repeat one year during primary or secondary school, while this proportion reaches 40% among the respondents with low education[7]. By contrast, only one third of respondents coming from families with low educated parents ever enroll in university compared to three quarters of respondents with tertiary educated parents.

Following this descriptive illustration of the sample and variables in the ESGE dataset, we report the results from the multivariate regressions in the next section. We estimate both Linear Probability Model (LPM)'s coefficients with robust standard errors and logit models with odds ratios. The two provide substantially equivalent results in terms of marginal effects so, due to the easier interpretation, the LPM is reported in the main text while the Logit models are reported in Appendix Tables A.1-A.2.

7 Very similar differences in the risk of repetition by parental education have been previously documented using PISA data (Enguita et al. 2010).

4. Results

Table 3 reports the LPM coefficients for repetition and enrollment in university depending on parental separation and mother's or father's education. Net of family structure, the probability that respondents born to tertiary educated mothers experience the repetition of one year at school is 23 percentage points lower, compared to children of low educated mothers. Conversely, the probability of attending university is 46 percentage points higher for children with mothers with tertiary education than children with mothers with lower education. The advantage of having a father who is tertiary educated are similar but slightly smaller compared the advantage of a highly educated mother. Net of parental resources, experiencing parental union dissolution is negative for child educational attainment: when parents are separated instead of together, the probability of retaking one year increases about 15%. Similarly, having separated parents reduces the likelihood of attending university by about 10%. The penalty is, for both outcomes, substantially meaningful: it is twice the size of female advantage in the case of school performance and two-thirds of that for the transition to university. Similar results from other studies confirm the robustness of the association: using Generation and Gender Survey for data for 14 countries, Bernardi and Radl (2014) estimate an average divorce penalty of around 7 percentage points for achieving a university degree. Results from the logistic regression are very similar (Table A.1), with the odds ratio of repeating one year being twice as large if the respondent has separated parents rather than living in intact families and the odds ratio of attending university being around 40% smaller for children of separated parents.

If one broadens the perspective to the larger issue of intergenerational inequality, our study also indicates that social background inequalities dominate over the disadvantage associated with family structure, particularly in the case of enrollment at university. For instance, the probability of university enrollment for children of highly educated parents is about 50 percentage points higher than that of the children of low educated parents (and about 6 times higher in relative terms). The penalty associated with parental separation amounts to a reduction in the probability of enrollment of about 10 percentage points on average. Any discussion on the role of family structure on the reproduction of inequality should not lose sight of the fact that the size of association between children's outcome and family structure is tiny when compared to that between children's outcome and parental education or social class.

In line with existing evidence, control variables show that female respondents have lower risk of repetition and a higher probability of university attendance while the number of siblings is negatively associated with both outcomes. Having a mother and father working is positively correlated with higher educational outcomes although the effects are not precisely estimated in the models. The same applies to living in a large city: it fosters better educational outcomes but the coefficients are often not statistically significant. Unexpectedly, younger respondents perform worse in terms of grade repetition and they are less likely to enter tertiary education[8]. These coefficients are small but precisely estimated.

8 The increase over time in the risk of repetition is in line with the administrative data presented in Carabaña (2017) that show that the rate of repetition increased between mid-1990s and the 2014. In

Table 3: Linear Probability Models of repeating one year at school and attending university after parental separation by mother and father education

	(1) Model	(2) Model	(3) Model	(4) Model
	Repetition of one year		Attending university	
Mother upper secondary	-0.104***		0.258***	
	(-0.166- -0.041)		(0.192-0.323)	
Mother tertiary	-0.234***		0.462***	
	(-0.302- -0.167)		(0.390-0.534)	
Father upper secondary		-0.061**		0.210***
		(-0.120- -0.002)		(0.149-0.271)
Father tertiary		-0.194***		0.459***
		(-0.253- -0.135)		(0.399-0.519)
Parental separation	0.154***	0.152***	-0.094*	-0.104**
	(0.045-0.262)	(0.043-0.261)	(-0.196-0.008)	(-0.205- -0.004)
Female	-0.086***	-0.086***	0.139***	0.151***
	(-0.131- -0.042)	(-0.130- -0.042)	(0.095-0.182)	(0.108-0.193)
Year of birth (Cent.)	0.005***	0.003**	-0.006***	-0.004***
	(0.002-0.008)	(0.001-0.006)	(-0.009- -0.003)	(-0.007- -0.002)
R's siblings	0.063***	0.065***	-0.072***	-0.076***
	(0.026-0.100)	(0.028-0.103)	(-0.108- -0.036)	(-0.112- -0.041)
Mother working (R 16)	-0.009	-0.051**	0.003	0.069***
	(-0.058-0.039)	(-0.098- -0.004)	(-0.044-0.050)	(0.025-0.114)
Father working (R 16)	-0.005	-0.006	0.083*	0.060
	(-0.098-0.089)	(-0.095-0.083)	(-0.001-0.168)	(-0.021-0.141)
City > 400000	-0.023	-0.054	0.050	0.054*
	(-0.089-0.044)	(-0.119-0.010)	(-0.016-0.115)	(-0.009-0.118)
CA	Yes	Yes	Yes	Yes
Constant	0.432***	0.472***	0.108*	0.057
	(0.300-0.563)	(0.345-0.599)	(-0.017-0.233)	(-0.062-0.175)
Observations	1,698	1,750	1,707	1,760
R-squared	0.063	0.063	0.150	0.170

Note: CA stands for *Comunidad Autónoma.* 95% Heteroskedasticity robust confidence intervals in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Source: Elaboration of the authors based on ESGE 2013.

In Table 4 we introduce the interaction between parental separation and parental education. The separation penalty in the risk of retaking for respondents with low educated mother or father (main effect) is larger compared to the average penalty measured in Table 3, while it is not for university enrollment (with the exception of children with low educated fathers, Model 4). Upper secondary and especially tertiary educated parents seem to compensate for the separation penalty (negative interaction terms for retaking and positive for enrollment at university). Contrasting the separation effect for the tertiary educated (changing the reference category in the parental education variable, not shown) also suggest that there is no difference in the risk of repetition and the probability of attend-

the case of university attendance one has to consider that the youngest respondents might still have a chance to enroll in the coming years (after completing secondary education in case they are late due to repetition or after a spell of inactivity or employment).

ing university among children of tertiary educated parents whether separated or not . However, coefficients are very imprecisely estimated – probably due to the very few cases of separation, especially among the tertiary educated – and the F-test for joint significance of the interactions does not rule out the possibility of a zero-interaction effect, so we cannot give a definite judgment based on these results. All interactions in the logistic model (Table A.2) are also not statistically different from zero and odds ratios in non-linear model are harder to interpret especially with regard to interactions.

Table 4: Linear Probability Models of repeating one year at school and attending university after parental separation by mother and father education. Interaction models

	Model (1)	**Model (2)**	**Model (3)**	**Model (4)**
	Repetition of one year		**Attending University**	
Mother upper secondary	-0.095***		0.261***	
	(-0.159- -0.030)		(0.193-0.328)	
Mother tertiary	-0.227***		0.458***	
	(-0.296- -0.158)		(0.384-0.532)	
Father upper secondary		-0.057*		0.208***
		(-0.118-0.004)		(0.145-0.271)
Father tertiary		-0.182***		0.454***
		(-0.243- -0.122)		(0.393-0.516)
Parental separation	0.203***	0.209***	-0.094	-0.130**
	(0.066-0.340)	(0.057-0.360)	(-0.216-0.027)	(-0.251- -0.009)
Par. Separation*Mother upper secondary	-0.128		-0.033	
	(-0.374-0.118)		(-0.278-0.211)	
Par. Separation*Mother tertiary	-0.172		0.124	
	(-0.459-0.116)		(-0.203-0.450)	
Par. Separation*Father upper secondary		-0.077		0.039
		(-0.334-0.180)		(-0.236-0.314)
Par. Separation*Father tertiary		-0.227*		0.092
		(-0.470-0.016)		(-0.149-0.333)
Female	-0.086***	-0.086***	0.138***	0.150***
	(-0.130- -0.041)	(-0.130- -0.042)	(0.094-0.182)	(0.108-0.193)
Year of birth (Cent.)	0.005***	0.003**	-0.006***	-0.004***
	(0.002-0.008)	(0.001-0.006)	(-0.009- -0.003)	(-0.007- -0.002)
R's siblings	0.063***	0.066***	-0.072***	-0.077***
	(0.026-0.100)	(0.028-0.103)	(-0.108- -0.036)	(-0.112- -0.041)
Mother working (R 16)	-0.011	-0.050**	0.003	0.069***
	(-0.060-0.038)	(-0.097- -0.004)	(-0.044-0.050)	(0.024-0.114)
Father working (R 16)	-0.003	-0.006	0.083*	0.060
	(-0.097-0.090)	(-0.094-0.083)	(-0.001-0.168)	(-0.021-0.140)
City > 400000	-0.023	-0.057*	0.049	0.055*
	(-0.089-0.044)	(-0.122-0.009)	(-0.017-0.115)	(-0.008-0.119)
CA	Yes	Yes	Yes	Yes
Constant	0.428***	0.467***	0.108*	0.059
	(0.296-0.560)	(0.339-0.594)	(-0.018-0.233)	(-0.060-0.178)
Observations	1,698	1,750	1,707	1,760
R-squared	0.064	0.064	0.150	0.170

Note: CA stands for *Comunidad Autónoma*. 95% Robust Confidence Intervals in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

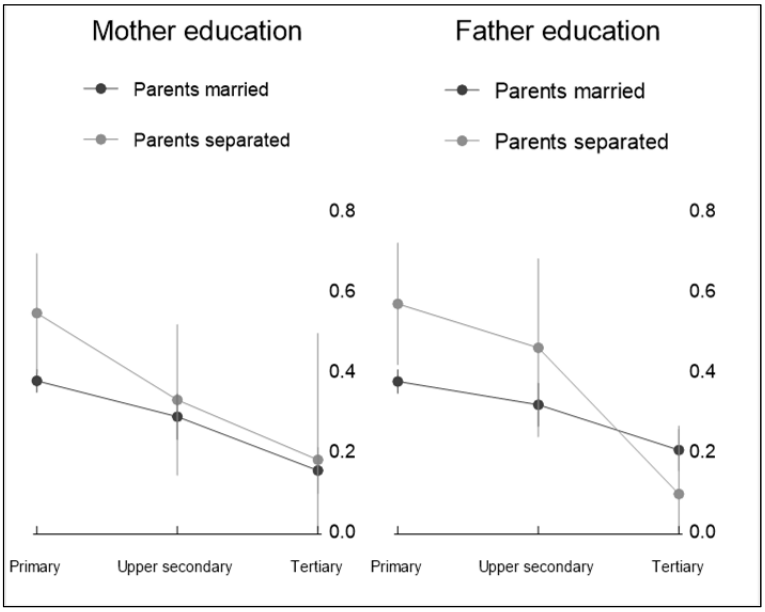
Source: Elaboration of the authors based on ESGE 2013.

Figures 2-3 present results from the predicted probabilities of children educational outcomes from the logistic model (also from Table A.2). Figure 2 shows the predicted probabilities of children repeating one year at school across mothers' and fathers' educational levels, comparing those who have separated (grey) or married (black) parents. We see that the penalty associated with parental separation is concentrated mainly among children with low educated parents. The gap is substantial both in absolute and in relative terms: the probability of retaking one year is about 20 percentage points higher among children of low educated parents that have separated, compared to children of low educated parents in intact families. No differences in the probability of retaking are observed among children of highly educated parents depending on whether the parents separated or not.

In terms of transition to university, the heterogeneity in the parental separation penalty by parental education is less pronounced. Moreover, the confidence intervals for the estimates for children from intact and non-intact families overlap (Figure 3) and therefore we cannot draw definite conclusions regarding the heterogeneity of the penalty across socioeconomic groups. Still, no support is found for the argument discussed in the section 2.2 that a larger penalty should be observed among children of highly educated parents in case of a "good" outcome, such is enrollment at the university.

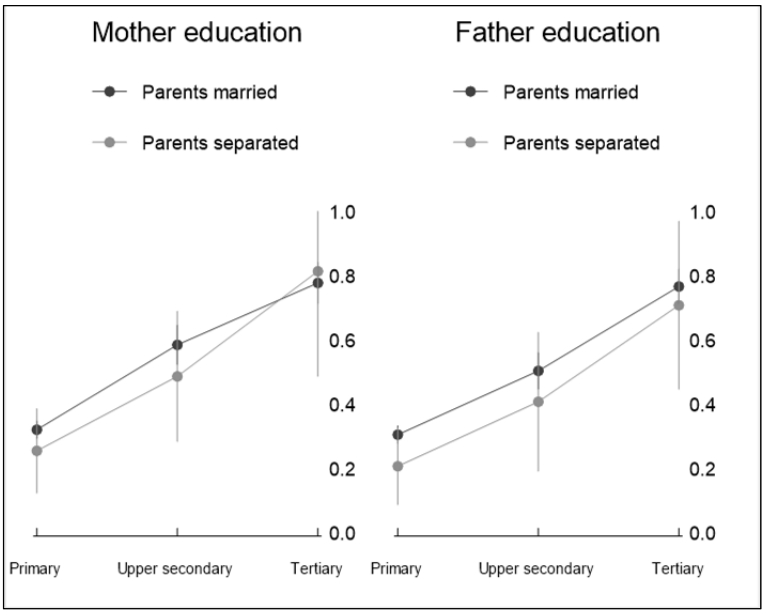
Overall, both the logistic and the linear probability models indicate that, if there is any heterogeneity across socioeconomic group in Spain, the largest negative consequences of union dissolution are to be found for the risk of repeating one year at school and among children of low educated parents. This holds irrespective of which parent we choose to measure family background and both considering absolute and relative differences.

Figure 2: Predicted probabilities of repeating one year at school



Source: Elaboration of the authors based on ESGE 2013.

Figure 3: Predicted probabilities of attending university



Note: Margins computes CI with a normal approximation of the standard errors computed from nonlinear predictions using the delta-method. Confidence intervals that include impossible values of the parameter, outside the rage 0-1 in case of predicted probabilities, can nevertheless be "correct." The estimation of confidence intervals only approximate (asymptotically) the coverage probability.

Source: Elaboration of the authors based on ESGE 2013.

4. Robustness checks

We performed a series of additional analyses as robustness checks (results for the additional models can be obtained from the corresponding author upon request). First, when we use the dominance model – the highest education of the two parents – we obtain almost identical results to using father's education. Second, net of combined mother and father resources,[9] the penalty is only slightly smaller for both outcomes, but imprecisely estimated in the model of the probability of entering university. Third, we replicate analyses dropping missing observations in any of the explanatory and dependent variables to perform the same analyses on identical samples. The sample size becomes even smaller (N=1,608) and the number of separations is reduced to 71. Results do not differ substantially from those presented here but the confidence intervals predictably become much larger. Fourth, we distinguish between primary and lower secondary education for mothers and fathers to check

9 We do not find strong evidence of multicollinearity (the highest Variable Inflation Factor is 1.70 for parental separation).

whether the union dissolution penalty was concentrated among very low (primary) educated parents. This seems to be the case for fathers' education on both performance and transition. The penalty is larger for primary educated mothers for transition to university but it is larger for lower secondary educated for school performance. Finally, we analyze the association between parental separation and transition to tertiary education, conditional on having attained at least upper secondary education (Formación Profesional de Grado Medio or Bachillerato, or higher). The penalty on attending tertiary education conditional on secondary education is lower and never statistically different from zero, across all levels of maternal or paternal education. This might be related to the reduced sample size or, more substantively, to the fact that once upper secondary education is attained, a large majority of students make the transition to the university.

To summarize, the robustness checks confirm the solidity of our main findings but also highlight new within-group heterogeneities. In all models, we find that the parental separation penalty on children educational outcomes is more pronounced for the risk of repeating one year than for transition to tertiary education, and the penalty on repetition is stronger among children with low educated mothers and fathers. However, the check on a more refined measure of parental education reveals differences within the low educated group. For the transition to university we find a significant penalty in non-intact families for the children of primary educated mothers and fathers, meaning that our findings in the main analysis average out the heterogeneity of the primary and lower secondary educated parents on university enrollment. Only the very low tail of children with primary educated parents suffer a penalty after parental separation on transition to university.

5. Conclusions

Focusing on the case of Spain, a relatively under-researched context in this literature, this paper investigates the existence of a union dissolution penalty on children's educational performance and school transitions, measured through years' repetition during primary or secondary school and enrollment in tertiary education. Before drawing our main conclusions, we must highlight a few limitations of our study. First, our findings cannot be interpreted as causal. Part of the observed negative association between parental separation and children's educational outcomes is likely to be driven by parental conflict or other unobserved traits (i.e. personality, interpersonal or conflict resolution skills) that lead to separation and also negatively influences children's educational outcomes. A correct interpretation of our findings should thus refer to some type of union malfunctioning that manifests itself in the observed break-up. In this respect there is also evidence that in some cases of harsh parental conflict, children actually benefit if parents separate (Jekielek 1998). In addition, our results represent a gross estimate that does not take into account post-separation arrangements that previous studies have indicated to be crucial for child wellbeing and possibly for educational attainment (Turunen 2017; Vanassche et al. 2013). The second relevant limitation of the study is the small sample size from which we cannot draw very conclusive statements, particularly when we investigate interactions. Union dissolution has increased significantly in Spain only during the last decade and studying its long-term consequences for the children is to a certain extent premature. Nonetheless,

our results can provide some hints for the coming years, when more and more children with separated parents will attend schools. An additional caveat is that in the cohorts considered in our analysis the educational gradient of union dissolution was still partly positive. This means that union dissolution was less prevalent among low educated parents. Low educated parents who did separate were, therefore, possibly more negatively selected on factors such as parental conflict, which also hinder children's educational performance and attainment. Since the educational gradient has changed in more recent years (Garriga/Cortina 2017), it will be interesting to replicate our analysis in the future to check whether the observed larger penalty for children of low educated parents also decreases.

With these caveats in mind, the main results are the following. First, we confirm existing evidence for other contexts and show that there is a negative association between parental break-up and Spanish children's educational outcomes. The negative impact of separation is more pronounced for the risk of repetition than for enrollment at university. Retaking school years is a typical feature of the Spanish educational system. In Spain, as outlined above, the main divide in educational outcomes is the transition from compulsory to non-compulsory education and grade repetition increases the risk of not making this transition. Second, we find that the heterogeneity in the parental separation penalty depends on the type of educational outcome considered (Bernardi/Boertien 2016; 2017b). For the analysis of the risk of repetition, that following our previous discussion can be considered an educational failure and a relatively rare event for students with highly educated parents, our results are in line with those previous studies that have hinted at compensatory effects in the case school performance. Our findings show that among the children of highly educated parents, the risk of repetition does not increase much if the parents separate, while it does among the children of low educated parents. The theory that we have sketched in section 2.2 provide a structural explanation of this findings. While the notion of compensatory advantage implies some active actions of parents to buffer their children from the negative consequences of an adverse event (Bernardi 2014), the theory outlined in this article suggests that the consequences of parental separation will differ depending on the selectivity of a given outcome. The penalty will be smaller for very rare (or very common) outcomes, as it is the case of repetition for students from highly educated parents. Regarding enrolment in tertiary education, while previous studies tend to document a larger separation penalty among children of highly educated parents (Bernardi/Radl 2014), we find no clear heterogeneity in the separation penalty. How can we explain this divergent finding? Bernardi/Boertien (2017b) show for the UK that the loss in economic resources after a union breakup is more consequential for university attainment among students with highly educated parents. What seems crucial in the case of UK is that the costs for enrollment at the university are relatively high and thus the household income decline associated with parental separation hampers children's chances of continuing on to tertiary education. In the case of Spain, university fees are comparatively low and thus the household's financial resources play a smaller role in the decision to enroll in university, compared to other contexts. In terms of the discussion on the level of selectivity of a given outcome, it is relevant that in the Spanish case enrolling at the university is common among students with highly educated parents (about 75% enroll at university) but not extremely rare among students from low educated parents (about 30% enroll at university, see Table 2). Both groups might then be located in area of the distri-

bution where the negative consequences of a parental separation bring about similar negative consequences. No clear pattern of heterogeneity would then emerge.

Finally, what are the main implications for McLanahan's "diverging destinies" thesis? Our results suggest that family instability does reinforce social inequality in terms of negative outcomes (school repetition), but it does not with respect to positive outcomes such as tertiary education enrollment. In the latter case, previous studies suggest that it might even reduce inequality in many contexts (Bernardi/Radl 2014). Our paper highlights that the choice regarding the type of children's educational outcome used to test the 'diverging destinies' thesis might explain part of the heterogeneity of previous findings, as found elsewhere (Gratz 2015; Bernardi/Boertien 2016). In section 2.2 we have argued that even if the separation penalty is equal across parental educational background, its consequences might still vary depending on threshold and level of selectivity of a given educational outcome. The theory in section 2.2 has only been sketched and further work might profitably expand and formalize the basic insights that we have outlined in this article.

Finally, despite the limits of testing the diverging destinies thesis in the Spanish context, where the diffusion of parental separation among low educated women is still low, this paper shows that the accumulation of disadvantage in terms of the risk of repetition (that can then lead to a permanent drop-out) among those with low educated and separated parents might require some specific attention by school and educational policy makers.

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Appendix

Logit models

Table A.1: Logit models of repeating one year at school and attending university after parental separation by mother and father education

	Model (1)	Model (2)	Model (3)	Model (4)
	Repetition of one year		Attending University	
Mother upper secondary	0.620***		3.191***	
	(0.458-0.839)		(2.376-4.285)	
Mother tertiary	0.278***		8.752***	
	(0.176-0.441)		(5.786-13.238)	
Father upper secondary		0.758**		2.594***
		(0.577-0.995)		(1.982-3.396)
Father tertiary		0.372***		8.442***
		(0.262-0.526)		(6.037-11.804)
Parental separation	1.957***	1.966***	0.631*	0.596*
	(1.231-3.111)	(1.229-3.144)	(0.371-1.075)	(0.347-1.023)
Female	0.669***	0.671***	1.979***	2.135***
	(0.542-0.825)	(0.547-0.824)	(1.597-2.452)	(1.720-2.650)
Year of birth (Cent.)	1.024***	1.016**	0.970***	0.979***
	(1.010-1.038)	(1.003-1.029)	(0.956-0.983)	(0.966-0.992)
R's siblings	1.337***	1.351***	0.699***	0.681***
	(1.123-1.592)	(1.135-1.609)	(0.584-0.838)	(0.568-0.817)
Mother working (R 16)	0.964	0.792**	1.015	1.413***
	(0.770-1.206)	(0.638-0.984)	(0.807-1.277)	(1.129-1.767)
Father working (R 16)	0.976	0.969	1.570*	1.369
	(0.638-1.495)	(0.656-1.431)	(0.979-2.518)	(0.873-2.148)
City > 400000	0.878	0.754*	1.277	1.303*
	(0.635-1.215)	(0.547-1.038)	(0.934-1.747)	(0.953-1.781)
CA	Yes	Yes	Yes	Yes
Constant	0.775	0.933	0.152***	0.117***
	(0.422-1.423)	(0.528-1.650)	(0.079-0.291)	(0.062-0.221)
Observations	1,698	1,743	1,707	1,760

Note: CA stands for *Comunidad Autónoma.* 95% Robust Confidence Intervals in parentheses.
*** p<0.01, ** p<0.05, * p<0.1.

Source: Elaboration of the authors based on ESGE 2013.

Table A.2: Logit models of repeating one year at school and attending university after parental separation by mother and father education. Interaction models

	Model (1)	Model (2)	Model (3)	Model (4)
	Repetition of one year		Attending University	
Mother upper secondary	0.646***		3.205***	
	(0.472-0.884)		(2.363-4.347)	
Mother tertiary	0.289***		8.520***	
	(0.180-0.462)		(5.598-12.967)	
Father upper secondary		0.771*		2.560***
		(0.581-1.022)		(1.942-3.374)
Father tertiary		0.395***		8.239***
		(0.277-0.562)		(5.846-11.611)
Parental separation	2.355***	2.441***	0.605	0.500*
	(1.315-4.218)	(1.289-4.623)	(0.298-1.229)	(0.232-1.076)
Par. Separation*Mother upper secondary	0.600		0.974	
	(0.208-1.734)		(0.314-3.027)	
Par. Separation*Mother tertiary	0.473		2.135	
	(0.062-3.630)		(0.206-22.164)	
Par. Separation*Father upper secondary		0.724		1.346
		(0.245-2.135)		(0.387-4.686)
Par. Separation*Father tertiary		0.328		1.661
		(0.065-1.640)		(0.351-7.871)
Female	0.670***	0.672***	1.976***	2.133***
	(0.543-0.827)	(0.547-0.825)	(1.595-2.449)	(1.719-2.647)
Year of birth (Cent.)	1.024***	1.016**	0.969***	0.979***
	(1.011-1.038)	(1.003-1.029)	(0.956-0.983)	(0.966-0.992)
R's siblings	1.340***	1.354***	0.701***	0.680***
	(1.124-1.596)	(1.137-1.614)	(0.585-0.840)	(0.567-0.816)
Mother working (R 16)	0.956	0.794**	1.017	1.410***
	(0.763-1.198)	(0.640-0.986)	(0.808-1.279)	(1.127-1.764)
Father working (R 16)	0.982	0.972	1.567*	1.365
	(0.641-1.506)	(0.658-1.436)	(0.977-2.512)	(0.870-2.142)
City > 400000	0.876	0.747*	1.276	1.308*
	(0.633-1.212)	(0.542-1.030)	(0.933-1.744)	(0.956-1.789)
CA	Yes	Yes	Yes	Yes
Constant	0.763	0.914	0.152***	0.119***
	(0.415-1.402)	(0.516-1.619)	(0.079-0.292)	(0.063-0.225)
Observations	1,698	1,743	1,707	1,760

Note: CA stands for *Comunidad Autónoma*. 95% Robust Confidence Intervals in parentheses.
*** p<0.01, ** p<0.05, * p<0.1.

Source: Elaboration of the authors based on ESGE 2013.