

Turku Center for Welfare Research

Working Papers on Social and Economic Issues

6/2016

**Does Death Really Make Us Equal? Educational  
Attainment and Resource Compensation after  
Parental Death in Finland**

**Irene Prix & Jani Erola**



Turun yliopisto  
University of Turku



---

© Copyright is held by the author(s). Working papers receive only limited review.

08.04.2016

# Does Death Really Make Us Equal? Educational Attainment and Resource Compensation after Parental Death in Finland

Irene Prix & Jani Erola

## Abstract

Attempts to explain the persistent importance of family background for children's educational attainment have typically highlighted the ways in which parents pass down advantage to their children in the form of educational, economic and social resources. However, equally important in explaining these familiar patterns may be the role that parental resources can play in preventing cumulative disadvantage.

To study such compensation processes, we examine to what extent experiencing the death of their father affects children's later educational trajectories in Finland. Our register-based sample contains over 66,000 children born between 1982 and 1987. The results based on multilevel linear probability models support our compensation hypothesis: bereaved children of disadvantaged mothers were less likely to complete upper secondary schooling or enter higher education, while paternal death had no such consequences for children of better-off mothers. However, bereaved children's higher education attendance shifted from the more prestigious universities towards the less selective polytechnics.

**Keywords:** parental death, educational attainment, parental resources, resource compensation, interactions, register data

## **1. Introduction**

The persistent positive association between children's educational and socioeconomic outcomes and their parents' educational, cultural and economic resources is one of the best established sociological findings across time and national contexts (Blau and Duncan, 1967; Bourdieu and Passeron, 1990; Breen and Goldthorpe, 1997; Breen and Jonsson, 2005; Van de Werfhorst and Mijs, 2010). This makes family a central concept in social stratification and social mobility research. Despite this centrality, it is only fairly recently that social mobility research has begun to pay more attention to the variety of family forms and the ways in which the transition between different types of family may affect intergenerational social inheritance (Biblarz and Raftery, 1993; McLanahan and Percheski, 2008). Given the historical rise of divorce rates, parental separation has taken center stage in the literature on the links between family disruption and intergenerational mobility processes. These studies have repeatedly observed lower educational outcomes among children of divorced parents, although the precise causal mechanisms driving this result have been subject to some debate (Amato, 2010; Björklund et al., 2007; Steele et al., 2009). Since parental separation and step-family formation tend to change children's relationships with their non-custodial parent (Albertini and Garriga, 2011; Kalmijn, 2015), researchers argue that such family transitions may accordingly attenuate the positive influence of this parent's social, economic and cultural resources on the child's later attainment (e.g., Biblarz and Raftery, 1993).

We contribute to this literature by focusing on the way in which both mothers' and fathers' resources affect children's educational outcomes after they experience the death of a parent. In contrast to parental divorce, where the effects of disruption are typically hard to disentangle from those of preceding or subsequent familial conflict (Amato and Anthony, 2014; Amato and Keith, 1991), the death of a parent may be regarded as a more clear-cut case of parental loss. This should also make it more suitable as a test case for analyzing the consequences of losing parental resources for children's later outcomes. Compared to parental divorce, the death of a parent has received much less attention, possibly due to the small number of children experiencing this event in typical survey data sets. The few sociological studies on the topic have usually found a weak

negative effect on children's educational and socioeconomic outcomes (Amato and Anthony, 2014; Berg et al., 2014; Biblarz and Gottainer, 2000; Jonsson and Gähler, 1997; Steele et al., 2009).

One of the possible explanations for these (surprisingly) weak effects is the mounting evidence suggesting that a loss of parental resources may not necessarily entail equally negative outcomes for all children. Recent research on parental separation has found that the consequences of family disruption vary between children of different social backgrounds. However, the results are inconsistent with regard to the direction of effects (Albertini and Dronkers, 2009; Bernardi and Radl, 2014; Grätz, 2015). These equivocal findings may, in part, reflect the contradictory nature of the possible mechanisms at work. On the one hand, children from affluent family backgrounds may have more to lose in terms of advantages and resources than those children who start out from already disadvantaged social positions (Bernardi et al., 2014). In other words, the personal losses of these children may at the same time level the playing field for disadvantaged children. However, one could also argue that parents with a higher level of resources will have a greater advantage over parents with less resources to compensate the losses and buffer the strains that family disruptions may entail for their children (Erola and Jalovaara, 2015; Mandemakers and Kalmijn, 2014). While previous research has made a strong case for including both fathers' and mothers' resources in intergenerational mobility studies (e.g., Beller, 2009), doing so is particularly crucial for disentangling these two compensating and equalizing mechanisms potentially at play following family disruptions. However, few studies on family disruption have been able to do so, often due to data limitations (for an exception, see, e.g., Mandemakers and Kalmijn, 2014).

We argue that processes of compensation may constitute a significant and underexplored mechanism contributing to the inheritance of social positions across generations. To examine the relative relevance of equalizing and compensating mechanisms for intergenerational mobility, we focus on father's death and the consequences of this loss for children's later educational trajectories. Our motivation to focus only on parental deaths stems mainly from the dramatically more common frequency of this loss among Finnish children. While 4% of children in Finland have experienced the death of a parent by the time they turn 16 years old (Statistics Finland,

own calculations), in 75% of these cases, the deceased parent was their father rather than their mother.

Our analyses are based on extensive register-based Finnish panel data on the educational trajectories of children born between 1982 and 1987. We follow these children, a sample of over 66,000 individuals, until they turn 23 years old. For our analyses, we focus on three types of educational outcomes, each of which is modelled separately. As a short-term outcome, we model drop-out from upper secondary education before age 18. Next, we focus on entry into higher education by age 23, distinguishing between the two types of higher education available in Finland: the vocationally oriented polytechnics and the academically more selective universities. Our analyses are based on multilevel linear probability models, which allow the clustering of siblings within their immediate families. Models include detailed information on the social and economic conditions experienced by these children up to the year they turn 16 years old, including their family structure as well as the income, education and occupational class of both their mother and father. Our prime interest lies with the following three research questions:

- 1) Do bereaved children face lower educational outcomes as young adults compared to non-bereaved children in Finland?
- 2) Are bereaved children more disadvantaged if their deceased father's resources were low or high?
- 3) To what extent can the surviving mother's educational, occupational and economic resources compensate or buffer the negative effects of paternal death on children's educational outcomes?

## **2. Background and hypotheses**

Previous research has frequently reported a weak negative effect of parental death on a variety of children's outcomes, including their achievement in math (Amato and Anthony, 2014), mean grades (Amato and Keith, 1991; Berg et al., 2014), their probability to enter (Jonsson and Gähler, 1997; Steele et al., 2009) and complete upper secondary education (Biblarz and Gottainer, 2000; Steele et al., 2009), as well as their

economic position as young adults (Corak, 2001; Lang and Zagorsky, 2001). Below we outline some of the likely explanations for these outcomes.

The emotional and psychological upheaval related to losing a parent may have a role to play in producing lower educational outcomes. For instance, bereaved children have been found to suffer from lower self-esteem (Amato and Keith, 1991; Worden and Silverman, 1996) and a greater risk to develop depression (Brent et al., 2009; Cerel et al., 2006), which is likely to affect their educational performance. In addition, there are some indications that bereaved children score lower in their educational aspirations and academic self-perception (Brent et al., 2012; Worden and Silverman, 1996), which could be thought to affect their risk assessment when deciding on their educational pathways (Breen and Goldthorpe, 1997). At the same time, it is likely that children's emotional and psychological response to bereavement may be significantly mediated through the extent to which the surviving parent can compensate the negative impact of bereavement on their children. This ability to buffer and compensate the impact of parental death may be higher if the surviving parent has high levels of resources and support at their disposal. Psychological evidence suggests that the surviving parent's degree of parental warmth and caregiver functioning can support children's resilience in the aftermath of bereavement (Lin et al., 2004; Melhem et al., 2008). In addition to increasing economic and caregiver strains on the surviving parent, the death of a parent fundamentally disrupts the influence of the deceased parent's cultural and educational capital on children's socialization. Although deceased parents may continue to serve as role models and affect their children's assessment about realistic future educational or occupational pathways, this effect is likely to be significantly weakened due to the deceased parent's lack of physical presence, continuous interaction, guidance and support in their children's lives. As a consequence, we expect heterogeneous effects of the death of a father on children, depending on both the deceased as well as the surviving parent's type and level of resources.

### **2.1. Deceased fathers' resources**

The death of a father may mean the immediate loss of a significant source of household income, which potentially increases the economic strains on some bereaved families. Economic strains have been found to lower the level of cognitive stimulation in

children's home environment (Votruba-Drzal, 2003) as well as lead to harsher and less-involved parenting practices (reviewed in Conger et al., 2010). These consequences may exacerbate the impact of paternal death for bereaved children's educational attainment. On the one hand, the death of a high earning father may make a greater absolute impact on a household's financial resources, and thus, children of high-income fathers may be thought to have "more to lose". However, fathers with higher incomes may also be more likely than less-well off fathers to have savings, insurance policies and other assets to inherit to their children. Thus, the inheritance of wealth is likely to buffer the loss of income and prevent financial distress in children's surviving families. By contrast, the relative financial impact of losing a father with lower earnings may be greater, given that lower earnings may slow down or prevent the accumulation of savings and wealth that these fathers can pass on to their children. As such, the relatively greater economic distress following paternal death may interfere with children's adaption processes. As a consequence, *we expect a lower negative impact of paternal death for children whose father had high earnings.*

Parents' educational attainment is well known to affect children's educational outcomes, for which a variety of mechanisms have been suggested. Higher educated parents may shape children's aspirations and frames of reference on their educational future, including assessing them on what are realistic or risky pathways (Breen and Goldthorpe, 1997), providing them with first-hand experience and guidance as to how to navigate the educational system (Pfeffer, 2008), and fostering their cognitive development (Boudon, 1974) as well as their development of particular types of cultural familiarity, styles of behavior and forms of expression that are favored by educational institutions (Bourdieu and Passeron, 1990; Bowles and Gintis, 1976). In addition, fathers with higher levels of education may show higher levels of involvement with their children (Sayer et al., 2004), particularly such aimed at assisting and stimulating their children's academic achievement (Yeung et al., 2001). Against this backdrop, *we expect children bereaved of fathers with higher levels of education to suffer a greater drop in their educational attainment than children whose deceased father was less educated.*

Net of both education and income, occupational class has been shown to disproportionately affect workers' health as well as their risk of premature death, particularly among men (Rahkonen et al., 2006; Torssander and Erikson, 2010). In

addition, the typically higher levels of independence and control over the work process in professional compared to blue-collar occupations have been linked with social class differences in mental health (reviewed in McLeod, 2013). Also unemployment levels have historically been greater for blue-collar occupations compared to professional work. Through their greater job insecurity, lower levels of control and a higher risk for unemployment spells, low-skilled class positions may affect fathers' sense of self-worth and well-being, which in turn can lead to greater levels of family discord (reviewed in Menaghan, 1991). Such interlinking between working conditions and family dynamics have also been suspected to explain the lower educational achievement of children whose fathers are precariously employed, net of their family's economic and educational resources (Kalil and Ziol-Guest, 2008). From this perspective, children whose deceased father had been working in low-skilled occupations may have been exposed to greater family strains prior to their bereavement. Given such potential prior strains, they may be less resilient towards paternal bereavement as an additional stressor. We therefore expect the *negative impact of father's death to be more pronounced for children whose deceased father worked in low-skilled as opposed to salaried occupations*, particularly in the short term.

## **2.2. Resources of the surviving mothers: potentials for compensation effects**

The surviving mothers' resources are likely to play a crucial role for children's trajectory in the aftermath of paternal death. For mothers with higher levels of income, the death of their children's father may constitute a less severe blow to the household finances. In this respect, mothers with higher income may be able to buffer the economic impact of paternal death and prevent additional economic distress for their families. Conversely, mothers in low-skilled occupational classes may be less able than salaried mothers to buffer the impact of bereavement for their children, given that their potentially more precarious work and lower control over working times may lower their own resilience and increase their caregiver strains. We therefore *expect a greater negative impact of paternal death for the children of mothers with low incomes and those in disadvantaged occupational class positions*. This expectation is supported by previous Finnish research on parental separation, which found mothers' socioeconomic



status on children's adult outcomes to be greater in single-mother compared to two-parent families (Erola and Jalovaara, 2015).

Mothers' education is likely to moderate the effect of bereavement in a similar direction. Previous research has shown that women with higher levels of education spend more time with their children (Sayer et al., 2004) and experience lower levels of parenting stress after family disruptions (such as separation and re-partnering) compared to lower-educated mothers (Cooper et al., 2009). In addition, scholars have found highly educated mothers to report greater levels of perceived social support (Harknett and Hartnett, 2011). Through its effect on mother's own resilience, bereaved children's outcomes may be more favorable (Brent et al., 2009) if their mothers are highly educated. This greater level of resilience may, in turn, facilitate the inheritance of mother's higher educational resources to their children. Hence, *we expect the death of a father to be less consequential for the educational outcomes of children with highly educated mothers* compared to those whose mothers have attained lower-level educational qualifications.

### **3. Data and methods**

Given that parental death in childhood is a comparatively rare event, any empirical research on this matter requires an exceptionally large data set to ensure sufficient statistical power. Relying on register-based panel data, our point of departure is a 10% sample of the Finnish population drawn in 1980. The analytical sample for our study consists of the children of these sample persons born between 1982 and 1987. The resulting data set includes over 66,000 children, followed from the year of their birth until the year 2010. Approximately 3 percent of the children in our sample had experienced the death of their father by the time they were 16 years old. Excluded from the sample are children without information on their mother or father in the registers (663 cases). Furthermore, we restricted the analytical sample to children who resided in Finland at the time that our dependent variables were measured.

Our analyses are based on multilevel linear probability models, which take into account the clustering of siblings within their immediate families (indicated by their mother). Linear probability models are not affected by the scaling problem inherent in logit

regressions, and parameters can be interpreted as average marginal effects (Mood, 2010). Each of our educational outcomes is modelled separately, to allow for varying strengths of effects across the educational hierarchy. Starting out with main effects models, we subsequently test the interaction between father's resources and father's death, before adding a further interaction term between mother's resources and father's death to the model. We perform these analyses for each type of father's and mother's resources separately. Finally, we run a number of robustness checks. We repeat all analyses using a more differentiated variable for father's death, distinguishing causes of death potentially linked to prior mental health problems (suicide and violent deaths, alcohol-related diseases, and accidental poisoning as possible indicator for substance abuse) from other causes. In addition, we examine whether our main results differ for boys and girls by testing three-way gender interactions for inclusion in our models.

## **4. Variables**

### **4.1. Dependent variables**

All of our dependent variables are dummy variables and measure children's educational attainment as teenagers or young adults. The earliest educational outcome in our analyses is *drop-out* from upper secondary education, which may capture short-term effects of paternal death. Our definition of upper secondary education includes both academic high schools (*lukio*) and vocational schools (*ammattikoulu*). Both types of upper secondary education enable students to apply for higher education studies. The typical age for completing upper secondary education in Finland is 19. Drop-out is defined as not being enrolled in upper secondary education at age 17 and/or age 18.

Our remaining educational outcome variables are measured when children reach the age of 23, thus capturing possible longer term effects of paternal death. In this context, we focus on entry into higher education, which in Finland is differentiated into the academically more selective universities, on the one hand, and the more vocationally oriented polytechnics, on the other. Entry into either one of these types of higher education is defined as ever having been enrolled or having completed studies for at least a bachelor's degree.

## 4.2. Key independent variables

Most of the predictors of interest in our models were measured during children's childhood, referring to an observation window starting when children are aged 1 and ending with the year they turn 16 years. The cut-off point of age 16 for observing children's background is motivated by the fact that this age coincides with the typical first educational turning point for children in Finland. It marks the end of the compulsory schooling period, after which children must decide whether to continue into upper secondary education (as well as between academic and vocational types of upper secondary schools). Hence, our central assumption is that the experiences and level of resources prior to this turning point are likely to affect children's later educational pathways and outcomes. For fathers who died before their child turned 16, the observation window for father's resources shortens to cover the period between their child's first birthday and the year these fathers died. To pick up possible non-linear associations, we operationalize most independent variables of interest as categorical rather than continuous predictors.

Of particular interest to our analyses in this article is the dummy variable *father's death*, which takes on a value of 1 for children who were aged 16 or younger when their father died, and a value of 0 if their father is still alive or died when they were older. For our robustness analyses, we modify this categorical variable of father's death and further distinguish two groups of bereaved children: those whose fathers died of causes possibly linked to prior problems in the affected family (suicide, violence, alcohol-related diseases, accidental poisoning) and those whose fathers died of other causes.

We differentiate three types of fathers' and mothers' resources: income, occupational class position and the highest level of educational attainment. *Father's income* as well as *mother's income* is measured as the sum of personal earnings (from employment and self-employment) and capital income, deflated and averaged over the period during which the child was aged 1 to 16 years. As such, this variable emphasizes the average financial situation of each parent during their children's childhood. Although this variable cannot capture sudden gains or drops in income, higher average income levels may also to some degree indicate a less fragmented employment history, particularly in the case of women. To accommodate possible non-linear associations, we use a

categorical version of these variables, based on quartiles of our analytical sample distribution.

*Father's and mother's occupational class* is measured at the latest available data point during the observation period, which ends in the year that children in our sample turn 16 years old. As such, this variable illustrates parents' occupational situation at the closest possible time prior to a key educational turning point, namely the end of compulsory schooling. Those parents without current occupation were classified as currently not employed. For measuring occupational class, we apply a modified version of the Erikson-Goldthorpe-Portocarero (EGP) class scheme (Erikson and Goldthorpe, 1992), distinguishing four groups: salaried employees (EGP I/II), skilled workers (EGP IIIa/V/VI), self-employed workers and farmers (EGP IV), and lastly, low- and unskilled workers (EGP IIIb/VII) together with those not currently employed. For retrieving these EGP codes, we first mapped the original Finnish occupational classifications into the International Standard Classification of Occupations (ISCO-88) and applied Harry Ganzeboom's conversion tools (Ganzeboom and Treiman, 1996), which we however adapted for the Finnish context (details available on request).

*Father's and mother's educational attainment* is defined as each parent's highest level of educational attainment on record during the observation window. Again using a categorical predictor, we distinguish basic education (at most 9 years of compulsory education), upper secondary education (either a high school diploma or 2-4 years of vocational schooling after compulsory schooling) and tertiary education (post-secondary vocational education (*opisto*) or higher education).

### **4.3. Control variables**

Prior to experiencing the death of their father, bereaved children may have lived in a variety of *family forms*. These prior transitions may have had an impact on children's educational outcomes, over and above the death of their father. Hence, we add controls for all family types that children may have experienced up until the year in which they turn 16. The resulting dummy variables are *ever lived with a single parent*, *ever lived in a stepfamily*, *ever lived without any biological parent*. For generating these variables,

we disregarded parents' marital status and focused solely on yearly family cohabitation patterns.

Sibling fixed effects models have shown that the frequently noted that the association between family types and children's later educational outcomes may be significantly confounded by children's *birth order* (Grätz, 2015; Sigle-Rushton et al., 2014). First born children (though not necessarily only children) have a general tendency for more favorable educational outcomes (Black et al., 2005), but they also experience family disruptions at necessarily older ages than their younger siblings. We therefore add a control for *birth order*, distinguishing children's status as their mother's first, second, or third (including higher-order) birth.

Furthermore, in the Finnish context, drop-out rates from upper secondary education decreased between 2000 and 2010 (Statistics Finland, 2011: 82). Since such cohort changes may slightly confound our results beyond the effects already controlled for with birth order, we add a categorical control for birth cohort to our model, distinguishing children born 1982-1983, 1984-1985, and 1986-1987.

We also add a categorical control for the *number of children in the child's household* at the latest available point of the observation period, assuming that scarcer resources in families with a greater number of children may have a negative effect on their educational chances. Finally, we also include father's age at birth of the child, as previous studies from the US have found that older parents are more actively involved with children's schooling and may have accumulated greater wealth compared to younger parents (Powell et al., 2006). Descriptive statistics for all variables in our models are reported in Table 1.

## 5. Results

### 5.1. Do bereaved children on average face lower educational outcomes as young adults compared to non-bereaved children in Finland?

In Table 2, we focus on the main effect of paternal death on upper secondary enrollment and higher education entry. On average, children in Finland who experienced the death

of their father by the time they turn 16 have a higher risk of dropping out of secondary education by age 18 and are less likely to complete upper secondary education or enter higher education by age 23. In line with previous research (e.g., Berg et al., 2014; Jonsson and Gähler, 1997), our findings suggest that much of the association between paternal death and educational attainment relates to the fact that this type of family disruption more often affects already disadvantaged children. This is illustrated by the dramatic change in the coefficient size for paternal death, which, compared to Model 1, reduces by half or even more (70% in the case of university attendance) once children's family background variables are controlled (Model 5). Nevertheless, a small average disadvantage for bereaved children persists even when all family resources are controlled. Accordingly, net of their family background, bereaved children are on average 3.5 percentage points more likely to drop out of upper secondary education by age 18. With regard to higher education, bereaved children in Finland are approximately 3 percentage points less likely to have entered either a polytechnic or university by age 23 (Model 5 in Table 2).<sup>1</sup>

[TABLE 1 ABOUT HERE]

## **5.2. Are bereaved children more disadvantaged if their deceased father's resources were low or high?**

If the loss of a father affects some children more than others, focusing on average effects may produce a distorted perspective on the impact of paternal death on intergenerational social mobility. As argued above, the consequences of bereavement may vary depending on whether losing a father also entails losing crucial socioeconomic and educational parental resources. To investigate this possibility, we add interactions between father's resources and father's death to our full main effect models. To avoid excessive multicollinearity, we include only one interaction term at a time for each type of father's resource to the main effects model. Table 3 reports interactions with mothers' and fathers' educational resources, while interaction models

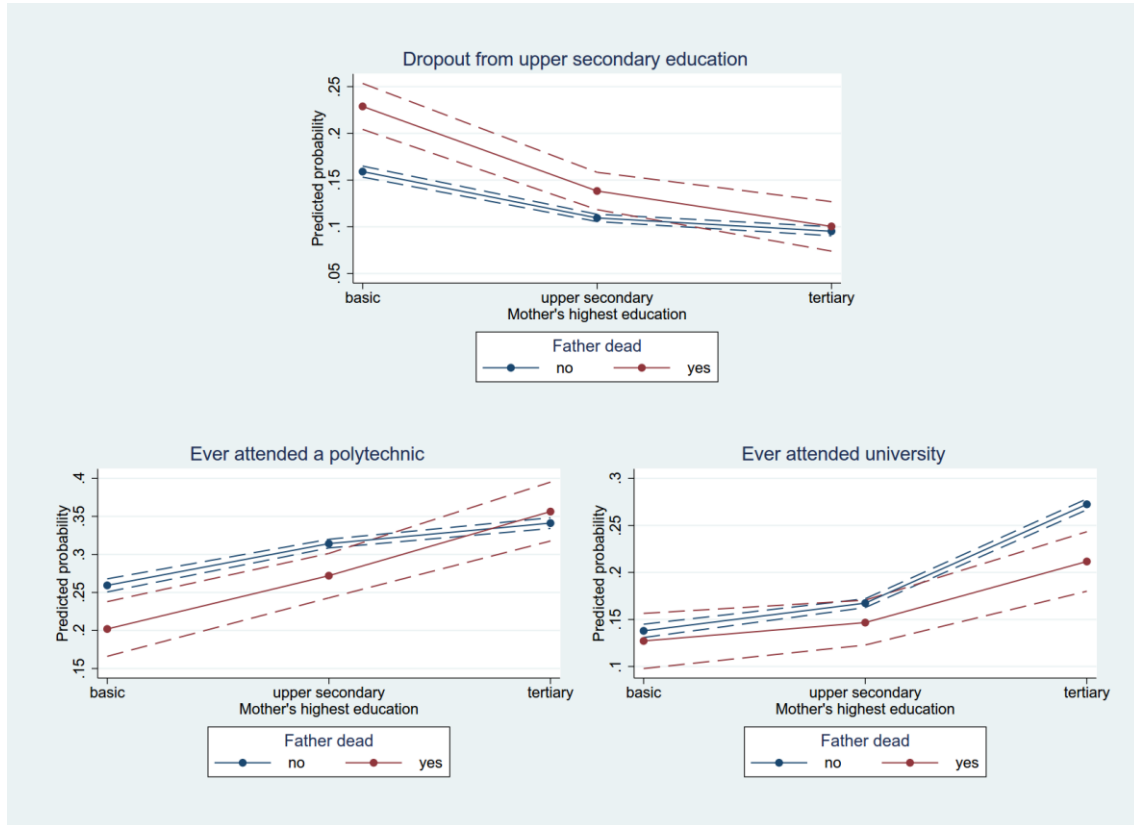
involving parental social class and income are shown in Appendix Tables 1 and 2, respectively.

The nonsignificant interaction terms in Model 1 of Table 3 suggest that contrary to our expectations, father's educational resources do not appear to modify the impact of father's death on their children's risk to drop out of upper secondary schooling or enter polytechnic higher education. In other words, the level of resources lost does not appear to be central to the negative impact that a father's death has on children with regard to these educational outcomes. A clear exception, however, is entry into universities, as demonstrated by the statistically significant negative interaction term for this outcome (Model 1 of Table 3). However, it is not children of fathers with low- to medium-levels of education who suffer most in their chances to enter university following the death of their father. Rather, our model suggests that children bereaved of fathers with top levels of resources see a notable reduction of their traditional advantage in regard to entering university by age 23. The same patterns emerge when focusing on father's occupational and income resources: again, the level of resources does not modify the impact of father's death, except for the case of entry into universities (Appendix Tables 1 and 2). In this respect, we can also conclude that, contrary to our expectations, the type of father's resource does not appear to matter. In all cases, it is the children of better-off fathers who experience a severe drop in their usually advantaged position in regard to accessing the most prestigious form of higher education in Finland. As such, the personal loss of these typically advantaged children appears at the same time to equalize chances for university entry across social backgrounds.

While father's resources did not moderate the negative impact of paternal death with regard to upper secondary drop out and entry into polytechnics, our results suggest that the opposite is true for mother's resources: mothers' resources and father's death significantly interact (see Model 2 in Table 3 and in Appendix Tables 1 and 2). In line with our expectations, higher levels of maternal resources appear to fully compensate or notably buffer the negative impact of paternal death with regard to attendance of upper secondary education as well as entry into polytechnic higher education. However, not even top levels of mother's education, income or occupational status appear to be able to attenuate the negative consequences that father's death has on children's probability to enter universities, which continue to be the more prestigious and more competitive

segment of Finnish higher education. Including the interactions between each parent’s resources and father’s death into the models does not alter these results (Model 3 in Table 3 and in Appendix Tables 1 and 2).

[TABLE 2 ABOUT HERE]



**Figure 1. Bereaved and non-bereaved children’s predicted probabilities for dropping out of upper secondary education by age 18 as well as ever having studied at a polytechnics or a university by age 23. The results are based on interaction model 2 in Table 3.**

However, what level of and which resources are needed to fend off any lasting consequences of paternal bereavement? The interaction terms in Table 3 suggest that those who are most at risk of drop-out are bereaved children whose mothers are the most marginalized in terms of their resources. This is further illustrated in Figure 1 (top panel), which shows that bereaved children with low-educated mothers have an approximately 8 percentage point higher risk of not being enrolled in upper secondary education by the time they are 18 compared to non-bereaved children with the same level of resources. Thus, for these children, the death of a father further entrenches an already existing disadvantage. However, medium-levels of maternal education already



appear to buffer or fully compensate this negative impact of bereavement (top panel of Figure 1). Examining the compensatory potential of mother's occupational resources leads to substantially similar patterns (Appendix Table 1). On the other hand, for a mother's income resources to have such compensating effects, higher than medium levels of average income seem to be required (Appendix Table 2).

However, for outcomes on the upper rungs of the educational hierarchy, our findings suggest that only higher-than-medium levels of maternal resources are able to prevent bereavement from affecting children's educational trajectories. With regard to polytechnic higher education, the children not negatively affected by their father's death are those with tertiary-educated mothers (lower left panel in Figure 1). However, at the same time, it is children with high levels of maternal resources who experience a greater disadvantage than others in regard to entering universities (right panel in Figure 1). In effect, for this group of children, bereavement may mean less of a change in the chances to enter higher education, than a change in the type of higher education attended. Bereaved children of mothers with mid and low levels of resources, on the other hand, face a clear negative effect to enter polytechnic higher education, despite its less competitive character compared to the universities. Examining the moderating impact of other types of mothers' resources, such as occupational class and income, leads to substantially equivalent conclusions (see Model 2 in Appendix Tables 1 and 2).

To summarize, our results supported our expectations that the death of a father does not affect children equally, but has on the whole more negative consequences for children from families with lower resources. As such, we suspect that the ability of advantaged families to buffer and compensate for unfortunate events and losses may represent an important mechanism sustaining the intergenerational inheritance of socioeconomic and educational positions. Contrary to our expectations, our findings showed that whether the deceased father had high or low levels of resources does not appear to moderate the effect of his death on his children. However, a mother's level of resources proved crucial for buffering this loss and preventing the impact of bereavement from affecting their child's educational pathways. An exception to this pattern was found in the case of university education, where it was children bereaved of their well-off fathers who lost their traditional advantage. While these children were not affected in their chances to enter higher education if they had mothers with high levels of resources, they tended to

choose the less prestigious polytechnics over university studies. As such, these children were able to compensate the impact of bereavement from affecting the reproduction of their educational family background by entering the less competitive type of higher education.

## **6. Discussion and conclusion**

Contributing to the literature on the role of family disruption for intergenerational social mobility and social inheritance, we examined the extent to which children who experienced the death of their father by age 16 differ in their educational trajectories from children whose parents were alive during their childhood. That the experience of paternal death somewhat lowers bereaved children's educational performance and attainment has been well-established by previous research. In contrast, our article aimed at investigating the role that both fathers' and mothers' resources play in either exacerbating or compensating the impact of this loss for children's educational trajectories in Finland. In this context, we expected that, compared to children with fathers with low socioeconomic resources, children with well-off deceased fathers may be either more affected, given that they had an advantage to lose in the first place, or less affected, as resources such as income may be indicative of other economic wealth that typically can be passed on after death.

On the whole, our results both contradicted and supported our hypotheses. Contrary to our expectations, we found that with regard to drop out from upper secondary education, or entry into polytechnic higher education, father's resources did not seem to moderate the effect of their death on their children. Overall, it thus seems that it is not necessarily the amount of resources lost that are most crucial in explaining the negative impact effect of father's death on their children's educational outcomes. The only moderating effect that deceased fathers' resources in Finland appeared to play was with respect to university access: here, children with better-off fathers saw their traditional advantage notably reduced, which at the same time resulted in a more level playing field for bereaved children.

[TABLE 3 ABOUT HERE]

On the other hand, our results supported our expectation that mothers with higher levels of socioeconomic resources are in a better position to buffer any lasting educational consequences for children who experienced a crisis such as the death of their father during childhood. In most cases, paternal death had no or a significantly lower educational impact on children whose mothers were characterized by top levels of education and income or an advantaged social class position compared to children whose mothers had only low levels of socioeconomic resources. However, again, access to universities proved to be an exception: even children with mothers in the most advantaged social positions were somewhat less likely to have entered universities by age 23.

Thus, the general trend in our data suggested a protective role of maternal resources from the negative effects of paternal death. Why is it, then, that with regard to university education, it is children from the most advantaged family background who face the greatest negative consequences after paternal bereavement? We speculate that a risk aversion perspective may provide some pointers to this puzzle. If it can be assumed that children's educational trajectories are influenced by a general goal to avoid intergenerational downward mobility, then the most advantaged children have the most pressing needs to attain higher education, but they may also be a more heterogeneous group in terms of ability compared to those children from disadvantaged backgrounds who take the risk of embarking on intergenerational upward mobility trajectories. If the experience of paternal death affects performance as well as educational aspirations, as previous research has suggested, the more vocationally oriented and academically less selective polytechnics may appear as a safer route to attaining higher education qualifications. Indeed, in our sample, children from the most advantaged parental backgrounds were not only less likely to enter universities following bereavement, but the same group was actually more likely to enter polytechnics compared to their non-bereaved peers from well-off family backgrounds. However, this positive effect of bereavement on advantaged children's probability to enter polytechnic higher education was not statistically significant. Alternatively, the fact that bereavement reduced the traditional advantage of well-off children with regard to entering universities may also be a consequence of our relatively short follow-up. It may simply be that father's death only temporarily slows down decisive educational choices leading to university education for those with an advantageous family background. As such, it is possible that

these children are able to catch up with others from a similar socioeconomic background later on.

While the causal nature of any negative impact of family disruption on child outcomes is heavily debated among researchers focusing on parental separation, the death of a parent has typically been viewed with less suspicion. However, mortality research clearly demonstrates a link between socioeconomic disadvantage and younger ages of death in Finland, particularly among men (Martikainen et al., 2001). A possible driver of this result may be mental health problems, which have been identified to lower men's life expectancy in particular (Wahlbeck et al., 2011). As a result, children from bereaved families may have been subjected to a number of stressors prior to the death of a parent, such as family discord, parental separation or substance abuse (Cerel et al., 2000). Family fixed effects models may be able to limit the risk of possible unobserved heterogeneity bias stemming from such sources. However, we are unable to use such models, given that cohort restrictions in our data reduce the sample size of bereaved full siblings in our data below feasible levels for this type of analysis. To test the robustness of our results by alternative means, we explored whether the association of parental death with educational outcomes varied by the cause of father's death. Distinguishing children whose fathers' cause of death was attributed to alcohol, substance abuse, or suicide, from children bereaved by other causes of paternal death yielded no substantial differences. With regard to drop out from secondary education, our robustness analyses suggested that compensation effects may be even stronger for children who lost their father through more troublesome causes. We also investigated whether the death of a father may have differential consequences for boys and girls, yet our models revealed no significant gender differences. A further analysis of the role of gender and various causes of death, particularly with regard to compensation processes, may nevertheless prove a fruitful avenue for future research, for which an oversampling of bereaved children may be necessary.

In summary, despite the free education at all levels characteristic of the Finnish schooling system and comparatively low levels of social inequality, social groups with higher levels of resources remain better equipped to pass down their advantage to the next generation in Finland as well. Our analyses suggest that processes of compensating for crises and misfortunes may be part of the social mechanisms sustaining the

inheritance of advantage across generations. While our research remains unique in investigating the role of both parents' resources for moderating the impact of paternal death on children's educational outcomes, some recent studies have pursued a similar line of inquiry for examining the impact of parental separation on children's education. Some of these studies echo the compensation effects found in this article, yet, on the whole, evidence remains mixed. For example, Mandemakers and Kalmijn's (2014) study on primary school children in Great Britain found mother's education to compensate negative effects of divorce on children's psychological well-being, but not on academic achievement. On the other hand, Grätz (2015), using family fixed effects models with German data, found parents' educational resources to indeed buffer the negative impact of parental separation on teenagers' average grades as well as on their chances to enter the more academically selective track of upper secondary education (*Gymnasium*). Aside from the fact that lower educational performance at younger ages may not necessarily hinder longer-term educational attainment, these diverse findings suggest that processes of compensation may vary depending on the institutional context as well as the level within the educational hierarchy in focus. The importance of institutional context has recently been shown also in the cross-country study of Bernardi and Radl (2014), who found indications of equalizing as well compensating processes with regard to access to tertiary education, depending on the degree of stratification and tracking of the secondary education systems in question. However, we argue that too little attention has been paid to horizontal processes of compensation. For instance, our research found some tentative support for this notion, given that children from more advantaged families may buffer the impact of parental bereavement by attending less competitive forms of higher education, while the same family disruption tends to lower the chances of disadvantaged children to attain higher education of any type. A closer investigation of such horizontal strategies for buffering and compensating disadvantage may be crucial to better understand mechanisms sustaining intergenerational social inheritance.

## **7. Acknowledgements**

This research was supported by the European Research Council (Grant ERC-2013-CoG-617965, P.I. Jani Erola). A previous version of this article was presented at the

ECSR Conference "Cumulative Inequalities in the Life Course", Tallinn, 10-12 September 2015, and we thank participants for their helpful comments.

## 8. References

- Albertini M and Dronkers J (2009) Effects of divorce on children's educational attainment in a Mediterranean and Catholic society: Evidence from Italy. *European Societies* 11(1): 137–159.
- Albertini M and Garriga A (2011) The effect of divorce on parent–child contacts: Evidence on two declining effect hypotheses. *European Societies* 13(2): 257–278.
- Amato PR (2010) Research on divorce: Continuing trends and new developments. *Journal of Marriage and Family* 72(3): 650–666.
- Amato PR and Anthony CJ (2014) Estimating the effects of parental divorce and death with fixed effects models: Parental divorce and death. *Journal of Marriage and Family* 76(2): 370–386.
- Amato PR and Keith B (1991) Parental divorce and adult well-being: A meta-analysis. *Journal of Marriage and the Family* 53(1): 43–58.
- Beller E (2009) Bringing intergenerational social mobility research into the twenty-first century: why mothers matter. *American Sociological Review* 74(4): 507–528.
- Berg L, Rostila M, Saarela J, et al. (2014) Parental death during childhood and subsequent school performance. *Pediatrics* 133(4): 682–689.
- Bernardi F and Radl J (2014) The long-term consequences of parental divorce for children's educational attainment. *Demographic Research* 30: 1653–1680.
- Bernardi F, Boertien D and Popova D (2014) Differential effects of parental separation on child outcomes: are children from higher social backgrounds affected more? EUI Working Paper MWP 2014/06
- Biblarz TJ and Gottainer G (2000) Family structure and children's success: A comparison of widowed and divorced single-mother families. *Journal of Marriage and Family* 62(2): 533–548.
- Biblarz TJ and Raftery AE (1993) The effects of family disruption on social mobility. *American Sociological Review*: 97–109.
- Björklund A, Ginther DK and Sundström M (2007) Family structure and child outcomes in the USA and Sweden. *Journal of Population Economics* 20(1): 183–201.

- Black SE, Devereux PJ and Salvanes KG (2005) The more the merrier? The effect of family size and birth order on children's education. *The Quarterly Journal of Economics*: 669–700.
- Blau PM and Duncan OD (1967) *The American Occupational Structure*. New York: Free Press.
- Boudon R (1974) *Education, Opportunity, and Social Inequality: Changing Prospects in Western Society*. New York: Wiley & Sons.
- Bourdieu P and Passeron J-C (1990) *Reproduction in Education, Society and Culture*. London: Sage.
- Bowles S and Gintis H (1976) *Schooling in Capitalist America: Educational Reform and the Contradictions of Economic Life*. New York: Basic Books.
- Breen R and Goldthorpe JH (1997) Explaining Educational Differentials: Towards a Formal Rational Action Theory. *Rationality and Society* 9(3): 275–305.
- Breen R and Jonsson JO (2005) Inequality of Opportunity in Comparative Perspective: Recent Research on Educational Attainment and Social Mobility. *Annual Review of Sociology* 31: 223–43.
- Brent D, Melhem N, Donohoe MB, et al. (2009) The incidence and course of depression in bereaved youth 21 months after the loss of a parent to suicide, accident, or sudden natural death. *The American Journal of Psychiatry* 166(7): 786–794.
- Brent D, Melhem N, Masten A, et al. (2012) Longitudinal effects of parental bereavement on adolescent developmental competence. *Journal of Clinical Child & Adolescent Psychology* 41(6): 778–791.
- Cerel J, Fristad MA, Weller EB, et al. (2000) Suicide-bereaved children and adolescents: II. Parental and family functioning. *Journal of the American Academy of Child & Adolescent Psychiatry* 39(4): 437–444.
- Cerel J, Fristad MA, Verducci J, et al. (2006) Childhood bereavement: psychopathology in the 2 years postparental death. *Journal of the American Academy of Child & Adolescent Psychiatry* 45(6): 681–690.
- Conger RD, Conger KJ and Martin MJ (2010) Socioeconomic status, family processes, and individual development. *Journal of Marriage and Family* 72(3): 685–704.
- Cooper CE, McLanahan SS, Meadows SO, et al. (2009) Family structure transitions and maternal parenting stress. *Journal of Marriage and Family* 71(3): 558–574.
- Corak M (2001) Death and Divorce: The Long-Term Consequences of Parental Loss on Adolescents. *Journal of Labor Economics* 19(3): 682–715.
- Erikson R and Goldthorpe JH (1992) *The constant flux. A study of class mobility in industrial societies*. Oxford: Clarendon Press.

- Erola J and Jalovaara M (2015) The replaceable: the inheritance of paternal and maternal socioeconomic statuses in non-standard families. *Turku Center for Welfare Research Working Papers on Social and Economic Issues* 2.
- Ganzeboom HBG and Treiman DJ (1996) Internationally Comparable Measures of Occupational Status for the 1988 International Standard Classification of Occupations. *Social Science Research* 25(3): 201–39.
- Grätz M (2015) When Growing Up Without a Parent Does Not Hurt: Parental Separation and the Compensatory Effect of Social Origin. *European Sociological Review*: jcv057.
- Harknett KS and Hartnett CS (2011) Who lacks support and why? An examination of mothers' personal safety nets. *Journal of Marriage and Family* 73(4): 861–875.
- Jonsson JO and Gähler M (1997) Family dissolution, family reconstitution, and children's educational careers: Recent evidence for Sweden. *Demography* 34(2): 277–293.
- Kalil A and Ziol-Guest KM (2008) Parental employment circumstances and children's academic progress. *Social Science Research* 37(2): 500–515.
- Kalmijn M (2015) Relationships Between Fathers and Adult Children: The Cumulative Effects of Divorce and Repartnering. *Journal of Family Issues* 36(6): 737–759.
- Lang K and Zagorsky JL (2001) Does Growing up with a Parent Absent Really Hurt? *The Journal of Human Resources* 36(2): 253–273.
- Lin KK, Sandler IN, Ayers TS, et al. (2004) Resilience in parentally bereaved children and adolescents seeking preventive services. *Journal of Clinical Child and Adolescent Psychology* 33(4): 673–683.
- Mandemakers JJ and Kalmijn M (2014) Do mother's and father's education condition the impact of parental divorce on child well-being? *Social Science Research* 44: 187–199.
- Martikainen P, Mäkelä P, Koskinen S, et al. (2001) Income differences in mortality: a register-based follow-up study of three million men and women. *International Journal of Epidemiology* 30(6): 1397–1405.
- McLanahan S and Percheski C (2008) Family structure and the reproduction of inequalities. *Annual Review of Sociology* 34: 257–276.
- McLeod JD (2013) Social stratification and inequality. 2nd ed. In: Aneshensel CS, Phelan JC, and Bierman A (eds), *Handbook of the sociology of mental health*, Dordrecht: Springer, pp. 229–253.
- Melhem NM, Walker M, Moritz G, et al. (2008) Antecedents and sequelae of sudden parental death in offspring and surviving caregivers. *Archives of Pediatrics & Adolescent Medicine* 162(5): 403–410.



- Menaghan EG (1991) Work experiences and family interaction processes: the long reach of the job? *Annual Review of Sociology*: 419–444.
- Mood C (2010) Logistic Regression: Why we cannot do what we think we can do, and what we can do about it. *European Sociological Review* 26(1): 67–82.
- Pfeffer FT (2008) Persistent Inequality in Educational Attainment and its Institutional Context. *European Sociological Review* 24(5): 543–565.
- Powell B, Steelman LC and Carini RM (2006) Advancing age, advantaged youth: Parental age and the transmission of resources to children. *Social Forces* 84(3): 1359–1390.
- Rahkonen O, Laaksonen M, Martikainen P, et al. (2006) Job control, job demands, or social class? The impact of working conditions on the relation between social class and health. *Journal of epidemiology and community health* 60(1): 50–54.
- Sayer LC, Gauthier AH and Furstenberg FF (2004) Educational differences in parents' time with children: Cross-national variations. *Journal of marriage and family* 66(5): 1152–1169.
- Sigle-Rushton W, Lyngstad TH, Andersen PL, et al. (2014) Proceed with caution? Parents' union dissolution and children's educational achievement. *Journal of Marriage and Family* 76(1): 161–174.
- Statistics Finland (2011) *Oppilaitostilastot 2010 [Educational statistics 2010]*. Helsinki: Statistics Finland.
- Steele F, Sigle-Rushton W and Kravdal Ø (2009) Consequences of family disruption on children's educational outcomes in Norway. *Demography* 46(3): 553–574.
- Torssander J and Erikson R (2010) Stratification and mortality—A comparison of education, class, status, and income. *European Sociological Review* 26(4): 465–474.
- Van de Werfhorst HG and Mijs JJ (2010) Achievement inequality and the institutional structure of educational systems: A comparative perspective. *Annual review of sociology* 36: 407–428.
- Wahlbeck K, Westman J, Nordentoft M, et al. (2011) Outcomes of Nordic mental health systems: life expectancy of patients with mental disorders. *The British Journal of Psychiatry* 199(6): 453–458.
- Worden JW and Silverman PR (1996) Parental death and the adjustment of school-age children. *OMEGA-Journal of Death and Dying* 33(2): 91–102.
- Yeung WJ, Sandberg JF, Davis-Kean PE, et al. (2001) Children's time with fathers in intact families. *Journal of Marriage and Family* 63(1): 136–154.

## Tables in the text

**Table 1. Descriptives. Dependent and independent variables' frequencies (percent), means, standard deviations (SD) and number of observations (N) in the sample.**

Variables	Percent	Mean	SD	N
Dropout from upper secondary	11.56	0.116	0.32	66,441
Some polytechnic education	31.04	0.310	0.46	66,469
Some university education	19.48	0.195	0.40	66,469
Father dead	3.39	0.034	0.18	66,469
Female	49.01	0.490	0.50	66,469
Parents separated	29.92	0.299	0.46	66,469
Ever lived in stepfamily	13.47	0.135	0.34	66,469
Ever lived without parents	2.45	0.024	0.15	66,469
Birth order		1.92	1.21	66,469
Father's age at child's birth		30.84	5.73	66,469
Number of children in household		1.98	1.27	66,469
Birth cohort				
born 1982-83	34.73			66,469
born 1984-85	33.60			66,469
born 1986-87	31.68			66,469
Mother's income (average)		20,501.64	11,111.98	66,469
Father's income (average)		33,339.07	28,474.57	66,469
Father's highest education				
basic (lower secondary or less)	27.00			66,469
upper secondary	42.25			66,469
tertiary	30.75			66,469
Mother's highest education				
basic (lower secondary or less)	20.29			66,469
upper secondary	44.45			66,469
tertiary	35.26			66,469
Father's EGP class				
Salaried (EGP I+II)	28.31			66,469
Skilled (EGP IIIa,V,VI)	18.98			66,469
Self-employed and farmers (EGP IV)	16.50			66,469
Low-skilled (IIIb,VII) or no occupation	36.21			66,469
Mother's EGP class				
Salaried (EGP I+II)	22.65			66,469
Skilled (EGP IIIa,V,VI)	15.28			66,469
Self-employed and farmers (EGP IV)	9.74			66,469
Low-skilled (IIIb,VII) or no occupation	52.32			66,469

<sup>1</sup> It must be kept in mind that effect sizes reported here are measured in percentage point differences.

Small percentage point differences may mean a greater relative effect for outcomes of lower overall probability, such as university attendance.

**Table 2. Main effects models predicting dropout of upper secondary education by age 18 and higher education attendance by age 23 (multilevel linear probability models). Coefficients and standard errors. All models (M) control for female, father's age at child's birth, birth cohort, birth order, number of children in household at age 16. All coefficients are significant at  $p < 0.01$ , except those marked in *Italics* ( $p < 0.05$ ) and as NS (non-significant).**

	Dropped out of upper secondary education					Ever attended polytechnic higher education					Ever attended university				
	M 1	M 2	M 3	M 4	M 5	M 1	M 2	M 3	M 4	M 5	M 1	M 2	M 3	M 4	M 5
Father dead	0.072 (0.01)	0.053 (0.01)	0.042 (0.01)	0.039 (0.01)	0.035 (0.01)	-0.078 (0.010)	-0.055 (0.010)	-0.039 (0.010)	-0.035 (0.010)	-0.032 (0.010)	-0.098 (0.009)	-0.074 (0.009)	-0.037 (0.008)	-0.032 (0.008)	-0.029 (0.008)
Family structure	no	yes	yes	yes	yes	no	yes	yes	yes	yes	no	yes	yes	yes	yes
Parents' education	no	no	yes	yes	yes	no	no	yes	yes	yes	no	no	yes	yes	yes
Parents' EGP	no	no	no	yes	yes	no	no	no	yes	yes	no	no	no	yes	yes
Parents' income	no	no	no	no	yes	no	no	no	no	yes	no	no	no	no	yes
Intercept (individual level)	0.252 (0.01)	0.18 (0.01)	0.271 (0.009)	0.296 (0.010)	0.334 (0.010)	0.163 (0.012)	0.245 (0.013)	0.137 (0.014)	0.104 (0.014)	0.07 (0.015)	-0.069 (0.011)	0.012 <sup>NS</sup> (0.011)	-0.084 (0.011)	-0.102 (0.011)	-0.09 (0.012)
N	66,441	66,441	66,441	66,441	66,441	66,469	66,469	66,469	66,469	66,469	66,469	66,469	66,469	66,469	66,469

**Table 3. Coefficients for interactions between father's death and father's and mother's education (multilevel linear probability models). Coefficients and standard errors (in parentheses). Models include all control variables, lower-order terms and intercepts.**

	Dropout from upper secondary education			Ever attended polytechnic higher education			Ever attended university		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Father dead	0.048*** (0.011)	0.070*** (0.013)	0.076*** (0.014)	-0.043** (0.016)	-0.058** (0.018)	-0.062** (0.021)	-0.008 (0.013)	-0.011 (0.015)	-0.001 (0.017)
Father dead*Father's education									
Father dead*upper secondary	-0.023 (0.015)		-0.017 (0.015)	0.011 (0.022)		0.006 (0.022)	-0.011 (0.018)		-0.009 (0.018)
Father dead*tertiary	-0.023 (0.020)		-0.002 (0.021)	0.037 (0.029)		0.010 (0.031)	-0.093*** (0.023)		-0.08*** (0.025)
Father dead*Mother's education									
Father dead*upper secondary		-0.041* (0.016)	-0.039* (0.016)		0.017 (0.023)	0.016 (0.024)		-0.011 (0.019)	-0.007 (0.019)
Father dead*tertiary		-0.065*** (0.019)	-0.065** (0.020)		0.073** (0.027)	0.070* (0.029)		-0.054* (0.022)	-0.028 (0.023)
N	66441	66441	66441	66469	66469	66469	66469	66469	66469
BIC	33335.9	33325.9	33346.7	83697.5	83691.2	83713.3	53913.5	53923.6	53934.2

## 9. Appendix

**Appendix Table A 1. Interactions between father's death and parents' EGP class. Multilevel linear probability models, coefficients and standard errors (in parentheses). All models include all control variables and lower-order terms. Statistical significance marked as \*\*\*  $p < 0.001$ , \*\*  $p < 0.01$ , \*  $p < 0.05$ .**

	Dropout from upper secondary education			Ever attended polytechnic higher education			Ever attended university		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Father dead	0.044*** (0.010)	0.053*** (0.009)	0.059*** (0.011)	-0.044** (0.014)	-0.051*** (0.013)	-0.058*** (0.015)	-0.014 (0.011)	-0.022* (0.010)	-0.013 (0.012)
Father dead*Father's EGP class									
Father dead*Salaried	-0.022 (0.019)		-0.010 (0.020)	0.055 (0.028)		0.040 (0.029)	-0.092*** (0.023)		-0.09*** (0.024)
Father dead*skilled	-0.009 (0.019)		-0.009 (0.019)	0.014 (0.027)		0.015 (0.027)	0.011 (0.022)		0.011 (0.022)
Father dead*self-employed	-0.029 (0.022)		-0.023 (0.022)	0.006 (0.031)		-0.002 (0.032)	-0.016 (0.025)		-0.016 (0.026)
Father dead*Mother's EGP class									
Father dead*Salaried		-0.044* (0.019)	-0.042* (0.020)		0.069* (0.028)	0.061* (0.029)		-0.039 (0.023)	-0.016 (0.023)
Father dead*skilled		-0.063** (0.020)	-0.062** (0.021)		0.039 (0.030)	0.035 (0.030)		-0.006 (0.024)	0.002 (0.024)
Father dead*self-employed		-0.041 (0.028)	-0.033 (0.030)		0.036 (0.041)	0.038 (0.043)		-0.002 (0.034)	0.004 (0.035)
N	66,441	66,441	66,441	66,469	66,469	66,469	66,469	66,469	66,469
BIC	33,347.2	33,336.4	33,368.5	83,706.5	83,703.2	83,734.5	53,923.3	53,938.5	53,956.1

**Appendix Table A 2. Interactions between father’s death and parents’ average income. Multilevel linear probability models, coefficients and standard errors (in parentheses). All models include all control variables and lower-order terms. Statistical significance marked as \*\*\* p < 0.001, \*\* p < 0.01, \* p < 0.05.**

	Dropout from upper secondary education			Ever attended polytechnic higher education			Ever attended university		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Father dead	0.041*** (0.010)	0.051*** (0.014)	0.053*** (0.015)	0.043** (0.015)	-0.067*** (0.020)	-0.067** (0.021)	-0.013 (0.012)	-0.006 (0.016)	0.001 (0.017)
Father dead*Father’s income									
Father dead*2 <sup>nd</sup> quartile	-0.025 (0.017)		-0.019 (0.018)	0.024 (0.025)		0.008 (0.025)	-0.031 (0.020)		-0.023 (0.021)
Father dead*3 <sup>rd</sup> quartile	-0.000 (0.019)		0.008 (0.020)	0.023 (0.028)		0.002 (0.029)	0.005 (0.023)		0.015 (0.023)
Father dead*4 <sup>th</sup> quartile	-0.003 (0.022)		0.008 (0.023)	0.006 (0.032)		-0.027 (0.033)	0.075** (0.026)		-0.059* (0.027)
Father dead*Mother’s income									
Father dead*2 <sup>nd</sup> quartile		-0.003 (0.019)	-0.002 (0.020)		0.000 (0.028)	0.000 (0.028)		-0.007 (0.023)	-0.006 (0.023)
Father dead*3 <sup>rd</sup> quartile		-0.024 (0.020)	-0.023 (0.020)		0.034 (0.029)	0.034 (0.029)		-0.023 (0.023)	-0.020 (0.023)
Father dead*4 <sup>th</sup> quartile		-0.038* (0.019)	-0.038 (0.020)		0.099*** (0.027)	0.102*** (0.028)		-0.060** (0.022)	-0.051* (0.023)
N	66,441	66,441	66,441	66,469	66,469	66,469	66,469	66,469	66,469
BIC	33,347.3	33,344.3	33,375.6	83,709.1	83,692.9	83,725.1	53,931.4	53,932.8	53,958.9