Parental Separation and Educational Reproduction in 20th Century Sweden

My Järnefelt
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Abstract

This study examines the probabilities of attaining the highest level of education depending on parental education, and probabilities of reproducing parental education depending on parental separation. The theoretical starting point concerns social origin and social mobility. How parental separation affects educational reproduction among Swedish birth cohorts from 1905-1980 is investigated. Linear Probability Model (LPM) is used to analyze data from The Swedish Level of Living Survey (LNU). The results show that the probability of reproducing parental education is higher for those from intact families compared to those who experienced parental separation. However, the differences in probabilities between groups are small, and after controlling for a number of demographic traits, the correlation weakens. Furthermore, differences in the effect of parental separation for groups of different parental education is shown, although this is confounded by the educational expansion that took place in Sweden during the 20th century. The conclusion of this paper is that parental separation has a negative effect on the reproduction of parental education, and that the experience affects groups of different social origin differently.

Keywords

Parental separation, educational reproduction, social origin, social mobility, social capital
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Introduction

Family background, in terms of educational and economic capital as well as family structure, influences many aspects of individuals’ lives. Changes in family structure, such as parental separation, are considered important events that affect the social outcomes of children. Family structure and socioeconomic status later in life have been shown to be correlated significantly in many aspects. Compared to children from intact families, children of separated parents are disadvantaged with respect to educational attainment (Martin, 2012), they report poorer psychological well-being (Gähler & Garriga, 2012) and they experience greater difficulties in maintaining longstanding relationships (Erola, Härkönén & Dronkers, 2012).

Over half of the children in the US are expected to spend some time in a single parent home before they turn 18 (McLanahan & Percheski, 2008). In Sweden today, just over a quarter of children under 21 live in a family type other than an intact family. The most common postseparation family type in Sweden is that the child lives with a single mother (Statistics Sweden, 2017). Moreover, the risk of entry into poverty increases for women if they separate (Callens & Croux, 2009), essentially rendering the children of parental separation at a higher risk of entry into child poverty. When children from lower income homes not only experience economic hardship, but also the parents’ divorce, their likelihood of exiting poverty decreases significantly (Martin, 2012).

Previous research indicates that people aim to replicate or surpass their parents’ socioeconomic status, or in other words, everyone is in pursuit of upward social mobility (Breen & Goldthorpe, 1997). Children of highly educated single mothers have a lower chance of attaining the same level of education as their mothers, compared to their equivalents from intact families, resulting in direct downward social mobility (ibid). This study aims to investigate the differences in educational outcomes between children who experienced parental separation and those who did not. If parental separation penalties persist and are not decreasing, are we heading for a future in which a larger part of the population runs a risk of direct downward social mobility? Will the increased proportion of children brought up in post-separation families influence the social inequalities among future generations?
Being born into a family of a certain socioeconomic status is considered a strong indicator of what kind of opportunities one has. Educational aspirations of the child are socially constructed largely in the childhood home (cf. Breen & Jonsson, 2007; Coleman, 1988; Jonsson & Eriksson, 2000). Educational inequality research shows that social mobility and intergenerational transmission of educational attainment is highly country-specific, since the educational system, welfare system and family dynamic patterns within countries are intertwined and create a complex societal structure (Breen, 2010). The emergence of different post-separation family types (such as single parent homes, stepfamilies, shared physical custody) and the de-stigmatization of divorce makes Sweden an interesting setting for studies of parental separation penalties. Furthermore, an expansion of the educational system aimed at the equalization of opportunities has taken place in Sweden during the 20th century (Jonsson & Erikson, 2000, Korpi and Palme, 2004). Intuitively, one could argue that parental separation penalties in Sweden should have declined over time, considering the aforementioned factors. However, Gähler and Palmtag (2014) showed that even though the reasons for divorce have shifted in Sweden during the 20th century, the children of divorce suffer the same consequences today as they did in the beginning of the century. The study compared children of divorce to children of intact families, using The Level of Living surveys from 1968-2010. This study uses the same data, but instead investigates the educational levels of children of divorce compared to their own parental education. These considerations motivate the following research question; How does parental separation affect the intergenerational transmission of educational attainment?

**The Swedish context**
Changes in family dynamics and the impact they have on child outcomes vary greatly across countries. In order to understand them, they must be put into national context. Family dynamic trends, such as trends within marriage, cohabitation and divorce rates, are more easily distinguished and increased earlier in Sweden compared to the rest of Europe (Sweeny 2010). National family policies such as public day-care and child allowances are expected to influence living standards of children originating from different family structures in a variety of ways (DiPrete and McManus, 2000). Contemporary Sweden is an example of a socialdemocratic welfare regime (Esping-Andersen, 1990). Educational reforms implemented during the 20th century have been aimed at equalizing educational opportunities (Korpi and
Palme, 2004). These structural factors have led to Sweden being one of few European countries with high social mobility (Breen and Jonsson, 2007; Breen 2010) where social background has a weaker correlation with social outcomes in adulthood.

**Family structure**

Living with both biological parents is still by far the most common family structure in contemporary Sweden, approximately three quarters (72.5 %) of children aged 0 – 21 belong to this type of family. The share of children living in reconstituted families with one biological parent and one step-parent is 8 % and those living with single parents constitute almost a fifth (single mothers 15 % and single fathers 4 %) of the population. The remaining 0.5 % are children who live with neither biological parents, and since this category is very small it is not further addressed in this study (Statistics Sweden, 2017).

The Scandinavian countries are considered societies that provide the most structural support to families in terms of state subsidized child care, generous parental leave policies and child allowances (Esping-Andersen, 1990). This has led to the preconceived notion that children in Scandinavian countries, compared internationally, do not suffer from parental separation. The provided societal support is considered to have counteractive effects that minimize the negative consequences of parental separation (Breivik and Olweus, 2006). Nevertheless, empirical evidence show persistent disadvantages correlated with parental separation (Gähler and Palmtag, 2014).

**Educational expansion in Sweden**

Elementary school, in Swedish; *Folkskola*, was the only compulsory part of education in Sweden until the 1970s, when the previous 8-year long primary school was abandoned in favor of the compulsory 9-year long primary school (in Swedish; *Grundskola*) which is the school system used in Sweden today. Although this is the only part of the Swedish school system that is compulsory, most Swedes today continue throughout upper secondary school (in Swedish; *Gymnasium*). Lower secondary school prior to the reform in 1970s was called *Realskola* which resulted in a diploma that granted the carriers the possibility to apply for *Gymnasium* (UKÄ, 2017).

State policies aiming at equalizing educational opportunities in Sweden took place during the last half of the 20th century, and among the reforms was the expansion of higher education (Breen, 2010). Universities and colleges were both expanded in numbers and spread geographically and an increase in the amount of students they accepted took place. Two major
reforms contributed to the educational expansion; (a) generously subsidized loans was implemented by the state in the 1960s (in Swedish: *allmänt studiestödssystem*) and (b) a major reform of higher education took place in 1977 (in Swedish: *1977 års högskolorreform*) (UKÄ, 2017). These policies were aimed at creating comprehensive schooling on a national level (UKÄ, 2017). The introduction of free schooling at lower as well as higher levels of education fueled the expansion of educational levels among the Swedish population regardless of class background, both in the increase of higher educational attendees and a rise in the general educational level of the Swedish population. When more children attended school for a longer time, a greater number became eligible to apply for and transition to higher educational levels. Among the measures taken to achieve this goal, were the introduction of nine years of compulsory primary school for all pupils and centrally regulated curricula in Sweden in the beginning of the 1960s (ibid).

The proclivity to achieve higher level of education than your parents is more widespread in countries that have an open educational system (Buis, 2013). The Swedish educational system is an example of such a system, since it consists of both free schooling and choices into vocational or academic tracks at higher ages. In comparison, educational transitions succeeding your parent’s educational levels are increasingly harder in countries with more closed school systems. One example of a more closed system is the US, where there are vast differences in educational quality between the free public schools and expensive private schools. Other examples are the Dutch and the German school systems, where educational choices at earlier ages contribute to making the system more closed (Buis, 2013).

An open educational system contributes to an educational system with low degree of social closure, which is a setting in which social capital ought to be devalued (Coleman, 1988). However, recent research of the Swedish educational expansion and its consequences has suggested that Sweden is an example of *overeducated* society (Korpi and Tåhlin, 2007). This is a social context where the labor market is saturated, i.e. the demand of degree holders is less than the supply. Under such conditions there is a chance of increasing value in both social capital (due to scarcity) and social origin resources, i.e. class assets (Jonsson and Breen, 2007; Breen, 2010).
Theoretical considerations

Social mobility research provides a background in which the intergenerational transmission of educational attainment can be studied, and this will be further elaborated on in a following section of this paper. Social mobility is connected to the resources that certain social origins entail, and the type of resource considered here is social capital. Furthermore, parental separation and how that affects social outcomes will be discussed.

Social Mobility

Useful theoretical insights with respect to this research question are provided by social mobility research, which mainly concerns the association between the social origin and social destination of individuals. All individuals are born into a certain social space in the society and class positions are a common way to define this social space. The social class one is born into is called social origin. The destination is where individuals end up or position themselves over the course of their life, commonly measured using adult socioeconomic outcomes, such as educational level, type of employment or income. The process at interest is the route from social origin to social destination, e.g. from parental educational level to children’s educational level in adulthood. Societal factors influence this route in a differentiated way, depending on country-specific characteristics such as educational system, welfare regimes and family policies (Breen and Jonsson, 2007; Breen, 2010; Esping-Andersen, 1990).

Social mobility can be investigated by analyzing equality of opportunities. Equality of opportunity is based on circumstances on both individual level, such as parental socioeconomic status and/or parental education level, as well as on an aggregated structural level by characteristics that mark the social openness of countries (Breen and Jonsson, 2007). When the structural factors of a society make it more open, there is higher social fluidity, meaning that the social origin, although certainly influential, is less of an obstacle for attaining a higher social destination than one’s social origin. Examples of policies that increase social fluidity are free public (high-quality) schooling and postponed educational choices (such as choosing an academic or vocational track). When social fluidity is high the association between social origin and social destination is weak, indicating that individuals have a higher chance of upward social mobility (ibid).
Intergenerational transmission of educational attainment provides a good theoretical starting point when analyzing social fluidity and changes over time in origin-destination routes (Breen & Jonsson, 2007; Breen, 2010). A society in which disposable income varies greatly between social classes, and free, high-quality education is not accessible, is a society where the association between social origin and social destination is strong. In contrast, if a combination of progressive taxation and high-quality public schooling is accessible, the association between social origin and social destination weakens (Breen and Jonsson, 2007; Breen 2010). These mechanisms are driven by structural changes, such as the aforementioned family policies or educational reforms, and can be seen in either cohort effects or period effects.

Cohort effects refers to changes in the association between social origin and social destination caused by younger, more socially fluid cohorts replacing older, less socially fluid cohorts. Period effects entail the increase or decrease of social fluidity within the same cohorts, i.e. social upward/downward mobility within an individual’s life course (Breen and Jonsson, 2007). In Sweden, a cohort effect has been evident during the 20th century, when individuals born in the 1960s and 1970s (younger, more socially fluid cohorts) replaced those born in the 1910s and 1920s (older, less socially fluid cohorts) in the labor market.

When an academic degree gives access to labor market positions, a society turns more meritocratic, and the importance of social origin lessens. However, a countervailing effect can occur if the labor market becomes saturated, i.e. the labor market positions that demand a higher degree are fewer than the workers holding a higher degree. In such a scenario, a large middle class makes the holders of an academic degree more anonymous. This is a context in which social origin and social network connections might again be highly valued, since they are markers that separate the (otherwise) anonymous middle class member from the rest of the group (Breen & Jonsson, 2007). A society with high social fluidity (Breen and Jonsson, 2007; Breen, 2010) can be compared to a societal context with a low degree of social closure (Coleman, 1988). Both types of social context reduce the importance of social origin and indicate that a society has meritocratic characteristics.

Breen and Jonsson (2007) as well as Coleman (1988) use transmission of educational attainment as a way of measuring adult outcomes. Social capital is used as a facilitator of intergenerational transmission of resources in childhood (Coleman, 1988), and most
transmission of educational capital occurs during this time (Breen and Jonsson, 2007). But the starting point (social origin) of an individual’s life is differentiated in more ways than what parental class or parental educational levels can depict in a comprehensive way.

Social capital

The resources available to individuals of different social origins are related to adult socioeconomic outcomes and this study focuses on how educational capital can influence these outcomes. Parental educational level is highly correlated with adult children’s educational level. Coleman (1988) introduces a theoretical framework of how social capital has a function in the transmission of educational capital. Social capital alone is no capital, in contrast to how monetary capital or educational capital in itself can be valuable. Social capital is defined by its function in social interactions.

Social capital is a resource that is difficult to define, since it is not a measurable entity. Instead one must look at the social interactions in which it is used as a currency and how these social interactions set the rate of the currency. An examples of this is how parental educational level influences the child’s educational attainment. A child born to highly educated parents can reap the benefits of that particular resource regardless of social capital. However, if social capital is used to transmit that educational capital, the intergenerational transmission of the educational capital is facilitated and enhanced (Coleman, 1988). The children of highly educated parents have a higher chance to attain higher educational levels than their peers with less educated parents (Martin, 2012; Grätz, 2015). Consider a child born to highly educated parents, who is taught a skill which is a considerable educational resource by a parent at home, for example an extra foreign language or advanced math. This is a situation dependent on the educational capital of the parent and the social relationship between the parent and child, and it facilitates and enhances (i.e. the function) the child’s accumulation of educational capital. This is how social capital is defined by its function in social relationships. Without the educational capital and the social relationship, social capital would not exist, and the intergenerational transmission of educational capital would not be implemented as easily (Coleman, 1988).

Social capital is more highly valued in a context with a high degree of social closure. Hallmarks of a setting with high degree of social closure are multiple connections between the social agents within a network, e.g. a community in which everybody knows everybody.
With multiple connections between social agents the value of social capital increases, since multiple social relationships create a space in which the social capital has a function. In contrast, a context where the degree of social closure is low, the social capital has less importance and functionality. The Swedish educational system offers free schooling (at least for all its residents) and state subsidized loans are available for those who wish to attend higher education. Additionally, family policies aimed at facilitating the combination of family life and working life (such as public child care and child allowance) have been introduced and implemented during the last half of the 20th century (Korpi and Palme, 2004). These are factors that contribute to low degree of social closure in many social contexts in contemporary Sweden.

Swedish family policies are aimed at equalizing the opportunities for children (Breen and Jonsson, 2007). The moderating effect social capital has on the intergenerational transmission of educational attainment should therefore be less prevalent in Sweden, than in countries with a high degree of social closure. The function of social capital can be disrupted by a parental separation in childhood, since most transmission of capital takes place in the home one grew up in.

The type of family one grows up in affects other adult social outcomes such as income, family formation and psychological well-being (Grätz, 2015; Sweeney, 2010; Gähler & Palmtag, 2014). Intergenerational transmission of resources can be disrupted by numerous factors, and this study focuses on the disruption that parental separation in childhood brings about. The following section will approach parental separation penalties and the explanatory mechanisms that underlie them.

**Parental separation penalties**

International research shows that children who experienced parental separation while growing up have lower educational levels and a heightened risk of dropping out of school (Martin, 2012, Hampden-Thompson, 2013). Children who grew up with single mothers run a higher risk of attaining a lower educational level than their mother’s (ibid). Parental separation affects educational attainment negatively, and numerous explanatory mechanisms for the educational outcomes have been suggested. These mechanisms vary depending on whether the emphasis is on societal context, e.g. educational systems and family policies, or on social
origin, e.g. parental education and parental class. The following section presents some of the suggested mechanisms of why children that experience parental separation attain lower levels of education than their peers from intact families.

**Economic implications of divorce**

The economic deprivation effects on children’s outcomes following parental separation is strongly connected with the heightened risk of entry into poverty. Numerous studies assign the negative consequences for children post separation to the decrease in financial resources (Martin, 2012; DiPrete and McManus, 2000). For women, a separation heightens the risk of entry into poverty, while unemployment is the main trigger for entry into poverty for men (Callens & Croux, 2009). Since most common post-separation arrangement is that the children grow up with their mother only (Statistic Sweden, 2017), the consequence is that the children who experience parental separation also run a higher risk of entering poverty. The lower income associated with a single parent home, especially a single mother home, means that there is less money to spend on books, computers and extracurricular activities. These are expenditures that have all been shown to be important for the educational advancement of children (Martin, 2012; Hampden-Thompson, 2013).

Economic capital is often used within parental separation penalty research because it is easily measured and understood in absolute terms, i.e. comparing monetary capital between different groups. The economic implications post parental separation can be compared to loss of (or less access to) parental capital (Breen and Jonsson, 2007), as well as to devaluation of social capital (Coleman, 1988). The loss of educational capital occurs when one parent moves away which makes his/her resources less accessible for the child. The devaluation of social capital is caused by the loss of time spent with either one or both parents, since the social space in which social capital thrives is disrupted and reduced (in terms of time).

**Stress/Trauma hypothesis**

Experiencing a parental separation is an event that disrupts the everyday life of an entire family. The time before the separation is most likely filled with conflict between the parents, and the period after involves a lot of changes. Children that experience parental separation feel sadness, confusion and fear of losing a parent, unless the separation is due to severe conflict. One example of this is domestic violence, in which case the separation may be a relief (Clark, 2013). In Sweden, the reasons for divorce used to be severe conflict or domestic
violence, but have shifted to less severe reasons, such as conflict over division of household labor (Gähler and Palmtag, 2014). This means that most children who experienced parental separation in contemporary Sweden are more likely to suffer from the stress and shock of separation, instead of being relieved that a severe conflict has ended.

Parental separation penalties are, according to this perspective, a product of the stress induced on children that experience divorce rather than the economic deprivation effect. Children that experience parental separation have to adjust to numerous new circumstances; perhaps move somewhere else or live with a step-parent and step-siblings. Regardless of what the new circumstances are, the disruption is likely to cause stress. This may result in poorer educational outcomes, at least in a short-term perspective (Amato, 2000). If the parental separation takes place at a critical time point, when e.g. an academic choice is to be made, these short-term consequences can turn into adult outcomes (ibid).

Both economic deprivation and a stressful home environment are associated with poorer educational attainment (Grätz, 2015). However, economic deprivation and a stressful home environment can derive from other circumstances than parental separation. This leads to the next section of this study, namely selection. Selection affects both the risk of experiencing parental separation and how that experience influences the life trajectory of individuals.

**Selection**

Parental separation influences various factors that shape the adult life of individuals. But divorce or separation is not randomly distributed within a population. Within research that concerns parental separation penalties *selection bias* is an important issue. Selection bias refers to the heightened risk of experiencing parental separation groups, for example, those whose parents have certain personality traits that are associated with separation such as impulsivity or violence. These traits can create inter-parental conflicts and instability that are negative for child development while at the same time causing divorce or separation. An association between divorce and negative child outcomes may therefore be spurious and due to a third factor causing both the divorce and the child outcomes. In order to adjust for unobserved heterogeneity Amato and Anthony (2014) analyzed the effects of divorce on a variety of outcomes by using individual fixed effects models where each child serves as his or her own comparison before and after a parental union dissolution, i.e. not comparing children
with divorced parents to those in continuously married families. They found causal effects, albeit with small effect sizes (see also McLanahan et al. 2013 for a review of studies analyzing causal effects of divorce). They also showed that children with parents who had the highest divorce propensity showed the worst outcomes.

Social class can be both a selection factor and a moderating factor. Parents of lower socioeconomic backgrounds have higher divorce risks and their children have a lower likelihood of attaining high educational status (Grätz, 2015). This makes it important to take socioeconomic background into consideration when analyzing the relationship between divorce and children’s educational attainment.

Furthermore, socioeconomic factors may also moderate the effects of a parental union dissolution. Parents of different social origin handle the aftermath of separation differently and heterogeneity in groups that experience parental separation is important to understand when determining causality (Grätz, 2015).

Higher class parents are better prepared to handle and counteract parental separation penalties (Grätz, 2015). The larger amount of both financial and social capital gives these parents three main tools in handling the aftermath of separation; (a) greater ability to mobilize available resources to combat negative consequences post-separation, (b) preparedness to see and take counteractive measures to avoid social downward mobility (c) different upbringing styles in different classes – upper classes can provide a more stable environment following a separation (ibid).

Thus, the heterogeneity of children who experience parental separation must be taken into account when results in educational attainment are studied. For the children of low-educated parents, the experience of parental separation during childhood leads to negative consequences, such as poorer grades in core subjects and/or dropping out of school. The same pattern is not evident for the children of higher social origin (Grätz, 2015). This is called the compensatory class effect. It explains the moderating effect social origin has on life-changing events (e.g. parental separation) that shape the life trajectories of individuals in a society. This means that explanatory mechanisms behind poorer filial post-separation outcomes are not only concerned with the experience of parental separation, but also regard the social origin of the parents and how that moderates the effects of separation (ibid).

When separation is more common among those with low educational level, selection seems likely to, at least partly, cause the differences in educational attainment of children from different families. Gähler & Palmtag (2014) describes that while the stigma surrounding
divorce has weakened with the increase in divorce rates, the group affected by divorce has changed. Children from already disadvantaged homes run a higher risk of experiencing parental separation, and their educational attainment (that might be a causal effect of parental separation or not) could skew the results (ibid).

The above described theoretical framework leads to the postulation of the following hypotheses of this study:

H1. The intergenerational transmission of educational attainment is negatively affected by the experience of parental separation.

H2. The association has weakened over time and is less prevalent in contemporary Sweden.
Previous research

Unobserved heterogeneity and its implications for transmission of capital

The risk of experiencing parental separation is connected to already disadvantageous social origins (Bernardi and Radl, 2014; Grätz, 2015), which means that those with low education run a higher risk of separating. In Sweden, the association between social class and divorce show a reversal pattern over the course of the 20th century (Gähler and Palmtag, 2014).

Among the earlier cohorts, parental separation is more common among the upper classes. For the youngest cohorts, parental separation is more common among the lower classes. The age at which parental separation occurred is unaltered while contact with the non-custodial parent, residential mobility and the time spent living in a reconstituted family all have increased steadily (ibid). The association between lower educational attainment and parental separation can be caused by the fact that parental separation is more common among the already disadvantaged homes, homes from which children already have a higher risk of downward social mobility. The associations could hence be the products of either the parental divorce or selection (Gähler, 1998).

Factors that might influence the intergenerational transmission of educational attainment include demographic traits such as place of residence, parental occupation and education, as well as gender. While these variables are easy enough to include in different analyses, the interpretation of the results is more complex. Place of residence is often defined as urban or rural and measured by population size. The amount of social closure, and hence the existing social capital (Coleman, 1988), might be very high in a rural community where most of the population have been residents for generations, and share something very specific for their community, e.g. a mill town or company town (in Swedish: bruksort or brukssamhälle). Other rural communities with equivalent population might be newly established villages or towns, where people have moved to build new houses. The degree of social closure would be much lower in such a context. The amount of social closure and the value of social capital would hence differ greatly between these two places, while the respondents in an analysis would share the trait of growing up in a rural area.

Gähler & Palmtag (2014) conducted a study to determine whether the negative impact of parental separation on mental health and educational attainment have changed over time.
They found no evidence to support a measurable decline in the educational gap between children of divorced parents and children of intact families in Sweden over the 20th century. The proportion of children who experienced parental divorce has steadily increased during the last century but fewer claim to have experienced severe conflicts in their childhood homes (cf. empirical evidence found by Grätz (2015)). A larger proportion of the earlier cohorts reported that the dissolution of their parents’ marriage was due to severe conflicts such as domestic abuse. For later cohorts, the reasons for divorce shifted to psychological motives, such as conflict over division of household labor. The dissolution of a family union in which there is no severe conflict between the parents has a stronger negative impact on the children, while dissolution due to severe conflict such as domestic violence might instead benefit the children (Gähler & Palmtag, 2014).

A stressful environment, filled with severe conflict or abuse, within intact families can have similar effects as parental separation (Gähler 1998). Similar social mechanisms influence the educational attainment and psychological well-being post parental separation in international research (Breivik and Olweus, 2006). Norwegian children suffer the same relative parental separation penalties as children in the U.S. The main difference between children in the Scandinavian welfare states (Esping-Andersen, 1990) and the U.S is that the Norwegian children that experienced parental separation are considerably better off economically. As the negative consequences of parental separation are similar despite the Norwegian children being better off economically, this suggests that economic deprivation is not a comprehensive explanatory mechanism of parental separation penalties (Breivik and Olweus, 2006).

Comparing children who experienced parental separation to those that did not can be problematic. It is impossible to say that the children that experienced divorce would have the same life-trajectories as those who did not, had they originated from an intact family. This derives from the fact that the opposite of having experienced a divorce cannot be found in real life. It can be equally stressful for children to grow up with parents who stay together despite e.g. severe conflict (Grätz, 2015; Gähler, 1998).

A common way to approach this problem is to compare siblings, since this facilitates the control for family characteristics otherwise suspected to confound causal relationships. If the effect of parental separation on educational attainment would differ between siblings depending on age at separation, this could indicate causality. The comparison between siblings showed no impact of age at parental separation. This comparison suggests that the
negative effects on children’s educational attainment are mainly due to selection, not a causal effect of parental separation (Björklund & Sundström, 2006). When investigating the sibling difference, and making the distinction of experiencing divorce at a certain age, another process needs to be taken into account. A marriage or union that ends in a divorce can be seen as a process of successively worsening home conditions, i.e. parental conflict. The consequences of experiencing that process might account for the fact that timing of divorce had no impact. Parental education and socioeconomic status are not only correlated to the educational attainment of the child, but also the risk of union dissolution (ibid).

Regardless of the difficulties in determining whether selection or parental separation is the driving force of the poorer outcomes for children of divorce, numerous studies have shown that they fare worse compared to children of intact family background (Gähler and Palmtag, 2014; Breivik and Olweus, 2006; Martin, 2012). Since transmission of capital takes place mainly in the childhood, and the experience of parental separation has the most impact on the children if it occurs before they leave their parental home, the event is important to study. In Sweden, measures have been taken during the 20th century to equalize educational opportunities (Korpi and Palme, 2004), and Scandinavian children of separated parents are, in comparison, better off economically than children in for example the US (Breivik and Olweus, 2006). Nevertheless, parental separation penalties, in terms of lower education, poorer psychological well-being (Gähler and Palmtag, 2014), and higher risk for marital dissolution (Erola, Härkönen and Dronkers, 2012) persist.

The educational system in Sweden, with late choices into vocational or academic tracks, free high-quality schooling, and state policies aimed at equalizing educational opportunities bear the hallmark of a society with a low degree of social closure (Coleman, 1988). This combined with access to good data sources, and the relatively large proportion of children who have experienced parental separation, makes Sweden an interesting setting in which to conduct this study.
Research Design

Data

In this study four waves from the Swedish Level of Living Survey (LNU) is used. Data from the interviews in 1981, 1991, 2000 and 2010 is analyzed, rendering a span of respondents born between 1905 and 1980. In the 1981 survey the response rate was 82.4 %, 5613 respondents, in 1991 5306 individuals responded, rendering a response rate of 79.1 %. In 2000 the response rate was 76.6 %, 5142 respondents and in the 2010 survey 60.9 %, 4415 respondents (SOFI, 2017). The data contains extensive information about educational attainment, living conditions during childhood and parental background, making it a suitable data set for this study. In the earlier surveys the respondents included were between 15-75 years old, but since the 1991 survey the sampling frame has been age 18-75. The surveys were carried out using face-to-face interviews and part of the data is panel data. The data is individual level data and representative for the Swedish population. A large part of the respondents is included in a panel, and if they are, the responses from their latest interview is used.

The dataset originally consisted of 10086 respondents. If educational attainment in either 1981, 1991, 2000 or 2010 is missing, they are excluded (810 respondents excluded). 298 respondents were excluded since they had missing data on parental education. If the respondents did not answer one of the questions about conflict, economic hardship or place of residence growing up they were excluded (60 respondents excluded). Finally, respondents under the age of 30 at the time of interview were excluded, if they were not part of a later interview in which they had surpassed the age of 29. The age limit rendered an exclusion of 84 respondents in 1981, 199 in 1991, 360 in 2000 and 716 in 2010. The age limit is chosen to make sure that respondents have finished their highest level of education. The remaining number of respondents used in this study is 7559.
Method

First in this study, linear probability models are used to analyze the probability to attain the highest level of education, depending on parental educational level. The analyses are made on two groups, those that experienced parental separation and those that did not. Differences in educational attainment between children who experienced parental separation and those who did not is a common way of measuring parental separation penalties. This study aims to investigate parental separation by looking at the proclivity to reproduce or surpass one’s own parental education depending on parental separation. The probabilities to attain the same or higher educational level as one’s parents, depending on having experienced parental separation or not are hence analyzed using linear probability models as well. The respondents are divided into birth cohorts to enable the comparison of the probability of reproducing parental education over time. This is done to examine if there is any difference depending on when the respondent was born. This is important as the prevalence of divorce has increased over time which may influence the outcome. The main dependent variable is a dummy for having reproduced or surpassed one’s parental education, while the main independent variable denotes the experience of parental separation by age 16 or not. Questions about family type and home environment issues are formulated to capture the respondent’s circumstances at age 16. Experiencing economic hardship or conflict in the home is also measured at 16.

The main advantage of using linear probability model (LPM) compared to logistic regression is that it is possible to analyze interactions and results from different models. The direction of the coefficients for the different groups examined can be interpreted in a quite straightforward way. Hence, the interpretation of LPMs is more comprehensible than a logistic regression model (Mood, 2010). The aim of this study is to establish whether there is a heightened risk of downward social mobility for children who experienced parental separation, compared to their equivalents that lived in intact families. The probability of attaining the same as or higher level of education as one’s parents is used to investigate the intergenerational transmission of educational attainment. Since the aim is to examine different models and comparing different groups the LPM is a preferable method to use in this study (Mood, 2010).
Variables

The dependent variable in the first analysis regarding upward social mobility is constructed out of the educational variables. The main dependent variable in this analysis denotes the achievement of the highest level of education. If the respondent attained this level this variable takes the value 1 and 0 if the reach middle or low educational levels. The main independent variable is a variable that denotes if they have low, middle or high parental education. The analyses are conducted separately for those who experienced parental separation and those who did not. Additional variables denoting experiencing economic hardship or conflict in the home growing up, gender, type of residence and birth cohorts are used. In the second analysis regarding reproduction of parental education the main dependent variable is constructed as a binary variable with the value 1 if the respondent reached the same or higher educational level as their parents and 0 if they have lower educational level than their parents. In order to capture the intergenerational aspect of transmission of educational capital, the categories for parental education and educational level has to be comparable. This means that the categories have to be quite crude, and there is only three different educational levels that are possible to compare. The main dependent variable is hence a variable constructed of three educational levels, low, middle and high.

In the second analysis the main independent variable is a dummy variable which denotes if the respondent experienced parental divorce or not. This variable is constructed from reported family structure at age 16. The variables denoting if the respondent experienced economic hardship or conflict in the home growing up, are subjective responses to questions about their childhood. The questions posed regard the experience at age 16. Furthermore, standard demographic traits, such as gender and age are controlled for.

In the 1981 and the 1991 survey the category low education consists of those who either reported no education, did not complete primary school or completed primary school (Folkskola). Additionally those who completed both primary school and some vocational school of a maximum length of one year as well as lower secondary school (Realskola or Grundskola) are included in the low education category. For those interviewed in 2000 and 2010 the low education category includes those with no education, with completed primary...
school (Folkskola) or equivalent, and completed primary school (Grundskola). This corresponds to the categories of the 1981 survey, except for the response vocational school.

Before 1970 it was common to finish primary school (Folkskola) and either carry on to lower secondary school (Realskola) or to learn a trade in a vocational school and then start to work. Out of those interviewed in 2000 and in 2010, most people continued to upper secondary school (Gymnasium), although only primary school (Grundskola) is compulsory. The choice of learning a trade in vocational school either takes place after upper secondary school, or as a part of upper secondary school since pupils can choose to specialize in trades when choosing upper secondary school. Upper secondary school in Sweden hence contains specialization into different academic tracks. Either practical trades such as construction or health care, or specialization into theoretical school such as social science, humanities or natural science as a way to prepare for further studies. The vocational specializations in upper elementary school, however, contain not only practical courses, but also core subjects such as Swedish, English, Mathematics, History and Religion. These are subjects that are aimed at preparing pupils for higher studies, and the reason why contemporary vocational upper secondary school is not equivalent to elementary school and a vocational school of a maximum length of one year.

The middle education category consists of those who completed lower secondary school (Realskola) and a vocational education of a maximum length of one year, and those who completed upper secondary school in 1981 and in 1991. In 2000 and in 2010 the middle education category consists of those who completed upper secondary school, both those who specialized in vocational school and those who specialized in theoretical school. Lower secondary school (Realskola) and one year of vocational education in the 1981 and the 1991 surveys can be compared to the vocational upper secondary school in 2000 and 2010, since lower secondary school (Realskola) also was aimed at preparing pupils for higher studies (Salin, 2010).

The high education category for respondents interviewed in 1981 and 1991 includes those with completed upper secondary school and a vocational education of a length of one year or more, and those with an academic degree. For those interviewed in 2000 and 2010, those with a complete upper secondary school and some additional education, those with an academic degree, and those with postgraduate studies are included in the high education category. In the
1981 and 1991 surveys the highest level of education was an academic degree, and in the 2000 and 2010 surveys the highest level of education was postgraduate, but otherwise the categories correspond nicely.

Parental education is divided into three categories as well; low, middle and high education. The *low education* category includes only elementary school (*Folkskola*) or vocational school for the respondents interviewed in 1981 and 1991, and in 2000 and 2010 only elementary school (*Folkskola* or *Grundskola*), and elementary school and some vocational education. The *middle education* category consists of secondary elementary school (*Realskola*) and upper secondary school (*Gymnasium*) in the 1981 and 1991 surveys and the same in 2000 and in 2010. Academic degrees from either a college or a university are included in the high education category from the 2000 and 2010 surveys, and an academic degree from the 1981 and 1991 surveys.

The parents’ educational levels are combined into one variable for parental education, where this variable takes the value of the parent with the highest education. Earlier studies have sometimes used the highest educational level of the father, but in this study the highest parental education level is used (Erikson, 1984). This is due to the fact that the educational level among women has increased, particularly among the higher class background, and generally in all classes in most economically advanced societies (Breen and Goldthorpe, 1997). In the Scandinavian societies the educational level of women has surpassed the educational level of men, which makes the highest educational level of either parent more sensible to use (Erikson 1984).

Economic hardship is a binary variable with the value of 1 if the respondent reports having experienced any economic hardship growing up, and 0 if not. The variable that denotes conflict in the home is constructed in the same way. Both of these variables are measures of subjective experience and capture the memories of the respondents. This means that some of them might not remember if they experienced economic hardship or conflict, and the effects must be interpreted with caution. Place of residence is measured using a binary variable as well. If the respondent grew up in a town with a population smaller than 10 000 this variable takes the value 0 and 1 otherwise.

The stepwise modeling of the models starts out with a simple bivariate check to see if the main independent variables have an effect on the main dependent variables. The first control for these effects include the addition of demographic traits that denote gender, birth year and type of residence. These controls are made to investigate whether the effect still holds for the main independent variables, regardless of time of birth, gender and urban or rural type of residence growing up. The last step of the models include the control for experiencing economic hardship or conflict in the home growing up. These are controls that are conventionally found in the literature regarding parental separation, and are considered to be connected with the educational attainment or the respondents, as well as the experience of parental separation.

In addition to the analyses conducted investigating attaining the highest level of education, and investigating reproduction of parental education, an analysis investigating occupational status was investigated. This analysis rendered no significantly different results from these analyses and is hence not included in this paper.

**Results**

**Descriptive analysis**

Table 1 presents descriptive statistics for dependent and independent variables used in this study. The dependent variable denotes the reproduction of educational level and shows that only 6% of the respondents attained lower educational level than their parents. An overwhelming majority (91%) did not experience divorce or parental separation. Educational levels of the respondents reflect the educational expansion that has taken place during the 20th century, as the parental educational level is much lower than that of the respondent’s own educational levels.
Table 1. Descriptive statistics: Variables.

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
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<td></td>
</tr>
<tr>
<td>Yes</td>
<td>94</td>
</tr>
<tr>
<td>No</td>
<td>6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experienced parental divorce or separation</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>9</td>
</tr>
<tr>
<td>No</td>
<td>91</td>
</tr>
<tr>
<td>Experienced economic hardship</td>
<td></td>
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<tr>
<td>Yes</td>
<td>21</td>
</tr>
<tr>
<td>No</td>
<td>79</td>
</tr>
<tr>
<td>Experienced conflict in the home</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>12</td>
</tr>
<tr>
<td>No</td>
<td>88</td>
</tr>
<tr>
<td>Grew up in an urban area</td>
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</tr>
<tr>
<td>Yes</td>
<td>32</td>
</tr>
<tr>
<td>No</td>
<td>68</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>51</td>
</tr>
<tr>
<td>Female</td>
<td>49</td>
</tr>
<tr>
<td>Birth cohort</td>
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</tr>
<tr>
<td>1905-1925</td>
<td>22</td>
</tr>
<tr>
<td>1926-1945</td>
<td>27</td>
</tr>
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<td>1946-1965</td>
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<td>1966-1980</td>
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<td>Low education</td>
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<td>Middle education</td>
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<td>High education</td>
<td>23</td>
</tr>
<tr>
<td>Parental educational level</td>
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</tr>
<tr>
<td>Low education</td>
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<tr>
<td>Middle education</td>
<td>18</td>
</tr>
<tr>
<td>High education</td>
<td>10</td>
</tr>
</tbody>
</table>

Source: LNU, 1981 and 2010 waves, author’s own calculations.
Figure 1 presents the experience of parental divorce shown by birth cohort. Overall an overwhelming majority of respondents stated that they grew up in an intact family. The proportion of children who experienced parental divorce is smaller in the earlier cohorts and gradually grows from 5% for the 1905-1925 cohort to 6% for those born between 1926-1945, 10% for the 1946-1966 cohort and finally 18% for the 1966-1980 cohort.

Figure 2 presents the educational level by birth cohorts. The educational level of the respondents has changed drastically over the 75 years examined. In the first cohort 87% reported a low educational level, while only 65% of those born in 1926-1945 end up in this category. The third birth cohort includes 27% with low education while only 5% of those born in 1966-1980 report the lowest level of education. In contrast the first cohort has only 5% highly educated people and 8% with middle education, while the middle education and the high education are 42% respectively 53% for the latest cohort.

Figure 2. Educational level by birth cohort.

Source: LNU, 1981 and 2010 waves, author’s own calculations.
Figure 3 presents the parental educational level of the respondents by birth cohort. Similar to the educational level of the respondents the educational expansion is visible for the parents as well, with a very high percentage of lower education in the early cohorts; 88% in the first cohort, and 82% in the second cohort. Middle education rises from 10% in the first cohort, 15% in the second to 21% in the third cohort. The youngest cohort is the most even distributed over educational levels. The lowest educational level is still the largest with 43% while middle education contains 24% and high education 33% for the parents of those born in 1966-1980.

Figure 3. Parental education by birth cohort.

Figure 4 presents the reproduction or surpassing of parental education by birth cohort. An overwhelming majority of all respondents attain the same or higher level of education as their parents, which is not surprising considering the educational expansion shown in previous figures. In both the first and the second cohorts 94% achieve the same or surpass their parents’ educational level, 93% in the third and for the youngest cohort, 92.5%.

Figure 4. Educational reproduction by birth cohort

![Educational reproduction by Birth Cohort](image)


Figure 5 presents the educational reproduction by parental separation. A large majority of both groups are shown to surpass or end up at the same level of education as their parents. Of those who experienced a parental separation 90.5% attain the same or higher level of education as their parental educational level. That proportion is larger for the respondents that originate from an intact family, where 94% attain the same or higher level of education as their parental educational level.

Figure 5. Educational reproduction by parental separation
Multivariate analysis

The multivariate analysis is two separate analyses that are presented in Table 3 and Table 4 below. The first analysis focuses on the probability of attaining the highest level of education depending on one’s parental education. In this analysis the people that experienced parental separation and those that originate from an intact family are analyzed in separate models. The second analysis focuses on educational reproduction, depending on experiencing parental separation or not.

In the first step of the analysis, the probabilities of attaining high level of education is analyzed, using parental education as the main independent variable. Respondents who experienced divorce are separated from those of intact family background, and the models are then compared. This yields three models that are shown in Table 3 below. The first model is an analysis using only the main independent variable parental education. This is a variable that can take three different values, low, middle and high education, and low education is used as the reference category. The main dependent variable high education is a variable that takes the value 1 if the educational level is high, and 0 if it is low or middle education. Middle parental education is positively correlated with attaining the highest level of education with 0.27 for those from intact families, and 0.32 for those that experienced parental separation,
compared to those with low parental education, respectively. For those with high parental education, those originating from an intact family have a positive correlation of 0.62, while those with separated or divorced parents have a positive correlation of 0.52 compared to those with low parental education, respectively. All correlations are statistically significant on a 1% level. These correlations are indicators of how parental background influences educational attainment. The fact that those with middle parental education and intact family background have a lower probability to attain high educational level compared to those that experienced divorce can be due to their age. Middle parental education is more common for older people, while parental separation is less common among them. This means that middle parental education should be a smaller proportion of those experiencing parental separation, since they are generally younger. In the high parental education category, the probabilities of attaining high level of education is higher for those of an intact family compared to those who experienced parental separation. Out of those who experienced parental divorce the parental education should be the higher than in the group for those of intact family background. Parental divorce is more common among the latest cohort and high parental education is also more common in this group. This could mean that parental separation has a larger effect on the probabilities of attaining the highest level of education for this group.

The second step in this analysis is to include gender, birth cohort and type of residence as independent variables. Model 2 shows the same general pattern for parental education as Model 1, namely that for those of middle parental educational level, probabilities to attain the highest level of education are lower for those originating from an intact family compared to those that experienced divorce. Middle parental education is positively correlated with attaining the highest level of education with 0.22 for those from an intact family, and 0.26 for those that experienced divorce, compare to those with low parental education, respectively. Furthermore, the same pattern for those of highly educated parents is shown in Model 2 as in Model 1. Those that experienced divorce and have a high parental education has a positive correlation with attaining the highest level of education of 0.42, while those who did not experience parental separation has a positive correlation of 0.49, compared to those with low parental education, respectively. All correlations are still significant on a 1% level. The correlations between birth cohort and attaining the highest level of education are all negative and statistically significant on a 1% level. The reference category is the latest cohort, 1966-1980. For the oldest cohort, those born in 1905-1925, the correlation between cohort and attaining the highest level of education is – 0.3 for those with an intact family.
background and -0.26 for those of divorced parents, compared to youngest cohort, 1966-1980, respectively. For those born in 1926-1945 who experienced divorce the correlation is – 0.18 and for those of an intact family -0.23, compared to the 1966-1980 cohort, respectively. In the 1946-1966 cohort, those who experienced divorce have a -0.17 correlation, and those who originate from an intact family have correlation of -0.15, compared to the 1966-1980 cohort, respectively. This could indicate that parental separation was less common for those born 1905-1945 compared to those born in 1966-1980, and had a more noticeable impact on educational level for those born in 1946-1965, when parental separation and divorce had increased.

Urban type of residence has a positive impact on attaining the highest level of education for those from an intact family, with a strength of 0.05 and a statistical significance on a 1 % level. Growing up in an urban area increases your probabilities of attaining the highest level of education compared to those who grew up in a rural area, if you originate from an intact family. For the group that experienced parental separation this was not statistically significant.

Model 3 includes the addition of experiencing economic hardship or conflict in the home when growing up. The correlations from Model 2 is basically unaltered, in the differences between groups and in statistical significance and direction of coefficients. Growing up in an urban area is still statistically significant on a 1 % level and with a strength of -0.05 for those originating from an intact family. Experiencing conflict in the home is negatively correlated with attaining the highest level of education for those of an intact family with a strength of -0.03, statistically significant on a 10 % level, while experiencing economic hardship is statistically significant on 5 % level for the same group. For those that originate from an intact family, both experiencing economic hardship and conflict in the home reduces the probabilities of attaining the highest level of education.

The second part of the multivariate analysis is conducted in three steps, yielding three different models, which are presented in Table 4 below. Model 1 presents a simple bivariate analysis which shows the effect of parental separation on educational reproduction. A negative coefficient of -0.03 is shown for parental separation, statistically significant on a 5% level. This indicates that the probability of attaining the same or higher educational level as one’s parents is smaller if the respondent experienced a parental divorce. The strength of the coefficient, however, is very small, which makes the explanatory force weak, despite the statistical significance.
The second step in the multivariate analysis is to add control variables to account for confounding factors in the correlation seen in Model 1. Model 2 shows that, when controlling for the demographic characteristics gender, cohort, and place of residence the effect of parental separation is still significant on a 5% level, and the same strength of -0.03. Model 2 also indicates that growing up in an urban area decreases the probability of reproducing and surpassing one’s parental education. This could be due to the fact that 68% of the respondents grew up in rural areas, and 47% of all respondents are born before 1946. Many of them could be children of farmers, i.e. low parental education. This makes it easier for them to surpass their parental education, and that may drive the results.

The third step of the multivariate analysis entails the further addition of independent variables denoting parental conflict in the home and experience of economic hardship. Model 3 shows that experiencing parental separation no longer has a statistically significant effect on reproducing parental education. This is however, significant on a 10% level with a strength of -0.02. Even though parental separation is no longer statistically significant on a 5% level, the direction of the coefficient is still negative and bears some holding with a 10% level of significance. Growing up in an urban area is still negatively correlated to reproducing parental education on a 5% level, but the strength has weakened from -0.03 to -0.02. Experiencing economic hardship is positively correlated to reproducing parental education, statistically significant on a 5% level, with a strength of 0.03. Those who experienced economic hardship while growing up have a higher probability of reproducing parental education than those who did not. This could indicate that those with low parental education suffered economic hardship and since they have a lower parental education, reproducing and/or surpassing that level is easier, in comparison to someone with higher parental education. Growing up in a home with conflict is negatively correlated to reproducing one’s parental education, statistically significant on a 5% level and with a strength of -0.03. Experiencing conflict in the home reduces the probabilities of reproducing or surpassing one’s parental education. The experiencing of parental separation and conflict in the home could be related, and both of them have a negative impact on reproducing parental education.

Interaction between cohort and parental separation was tested for. In an attempt to capture the effect of the educational expansion seen in Sweden over the 20th century, this interaction was included. Since no statistical significance was seen for the interaction, it is not presented in this study.
Table 3. Linear Probability Models for attaining high educational level, separate models for parental separation.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Intact Family</td>
<td>Parental Separation</td>
<td>Intact Family</td>
</tr>
<tr>
<td>Parental education (ref. Low education)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Middle education</td>
<td>0.27*** (0.01)</td>
<td>0.32*** (0.04)</td>
<td>0.22*** (0.02)</td>
</tr>
<tr>
<td>High education</td>
<td>0.62*** (0.02)</td>
<td>0.52*** (0.05)</td>
<td>0.49*** (0.02)</td>
</tr>
<tr>
<td>Gender (ref. Male)</td>
<td>-0.03 (0.01)</td>
<td>0.02 (0.02)</td>
<td>-0.002 (0.01)</td>
</tr>
<tr>
<td>Birth cohort (ref. 1966-1980)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1905-1925</td>
<td>-0.3*** (0.02)</td>
<td>-0.26*** (0.04)</td>
<td>-0.29*** (0.02)</td>
</tr>
<tr>
<td>1926-1945</td>
<td>-0.23*** (0.02)</td>
<td>-0.18*** (0.04)</td>
<td>-0.22*** (0.02)</td>
</tr>
<tr>
<td>1946-1965</td>
<td>-0.15*** (0.02)</td>
<td>-0.17*** (0.04)</td>
<td>-0.16*** (0.02)</td>
</tr>
<tr>
<td>Urban residence (ref. Rural)</td>
<td>0.05*** (0.01)</td>
<td>0.01 (0.03)</td>
<td>0.05*** (0.01)</td>
</tr>
<tr>
<td>Economic hardship (ref. No)</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Conflict in the home (ref. No)</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>0.12*** (0.05)</td>
<td>0.10*** (0.01)</td>
<td>0.31*** (0.02)</td>
</tr>
<tr>
<td>N</td>
<td>6881</td>
<td>678</td>
<td>6881</td>
</tr>
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</table>

p *<0.1, **<0.05, ***<0.01

Robust standard errors in parenthesis

Table 4. Linear Probability Models for attaining the same or higher educational level as parent.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parental separation</td>
<td>-0.03**</td>
<td>-0.03**</td>
<td>-0.02*</td>
</tr>
<tr>
<td></td>
<td>(0.01)</td>
<td>(0.01)</td>
<td>(0.01)</td>
</tr>
<tr>
<td>Gender (Ref. Male)</td>
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<td>-0.002</td>
<td>-0.002</td>
</tr>
<tr>
<td></td>
<td>(0.01)</td>
<td>(0.01)</td>
<td></td>
</tr>
<tr>
<td>Birth cohort (Ref. 1966-1985)</td>
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<td>-0.002</td>
</tr>
<tr>
<td>1905-1925</td>
<td></td>
<td>(0.01)</td>
<td>(0.01)</td>
</tr>
<tr>
<td>1926-1945</td>
<td>0.009</td>
<td>0.005</td>
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</tr>
<tr>
<td></td>
<td>(0.01)</td>
<td>(0.01)</td>
<td></td>
</tr>
<tr>
<td>1946-1965</td>
<td>0.004</td>
<td>0.003</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.01)</td>
<td>(0.01)</td>
<td></td>
</tr>
<tr>
<td>Urban type of residence (Ref. Rural)</td>
<td>-0.03***</td>
<td>-0.02***</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.01)</td>
<td>(0.01)</td>
<td></td>
</tr>
<tr>
<td>Economic hardship (Ref. No)</td>
<td></td>
<td></td>
<td>0.03***</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(0.01)</td>
</tr>
<tr>
<td>Conflict in the home (Ref. No)</td>
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<td></td>
<td>-0.03***</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(0.01)</td>
</tr>
<tr>
<td>Constant</td>
<td>0.94***</td>
<td>0.95***</td>
<td>0.94***</td>
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<td>(0.0)</td>
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<td>(0.01)</td>
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</table>

p *<0.1 , **<0.05, ***<0.01

Robust standard errors in parenthesis

Conclusions

The aim of this study was to investigate how intergenerational transmission of educational attainment is affected by parental separation. The first postulated hypothesis (H1) was that parental separation would have a negative impact on educational reproduction, but that the effect had become smaller for later cohorts. Furthermore, the value and function of social capital was believed to be of less importance in contemporary Sweden. This study concludes that those who experienced parental separation in 20th century Sweden have a slightly smaller chance of reproducing their parental education. However, this observed correlation is very weak, and previous studies have shown more robust results.

The descriptive results show that respondents who experienced parental separation have a lower chance of replicating or surpassing their parental education, compared to their peers from intact families. In the univariate analysis 94% of children from intact families attain at least the same level of education as their parents’. For those who experienced parental separation this share is 90.5%. The first step of the multivariate analysis show that parental separation affects the attaining of the highest level of education differently for different respondents of different parental educational levels. This could be a product of the different cohorts having great differences in parental educational level (the oldest cohorts have far more low parental education) and the fact that the majority of those who experienced divorce belong to the youngest cohorts. Additionally those who experienced divorce and had a middle parental education background had a greater chance of attaining the highest level of education compared to those that originated from an intact family. This could be an indicator of the educational expansion that took place in Sweden during the 20th century. The educational expansion has a greater positive effect on the probabilities of attaining the highest level of education than a parental separation has a negative effect on attaining the highest level of education. Since the first step of the multivariate analysis is a method of investigating the proclivity to attain the highest level of education, depending on parental education, the comparison between those who experienced parental separation and those who did not is hard to conclusively interpret. This is reason for conducting the second multivariate analysis, where the respondent’s probability to reproduce their parental education is tested by the experience of parental separation.
The bivariate analysis in this second step of the multivariate analysis indicates that parental separation has a negative correlation with educational reproduction, and even though this correlation is weak, only 3 % lower probability for those who experienced parental separation it holds the same strength and statistical significance after control for demographic traits such as gender, birth cohort and place of residence. Neither the control for birth cohort nor an interaction between birth cohort and parental separation rendered any statistical significance, and this means that the second hypothesis of this study that the effect would have diminished over time is rejected. The final control of experiencing conflict or economic hardship in the home growing up renders a slight decrease in the probabilities of reproducing one’s parental education, and parental separation no longer has a statistical significance on a 5 % level. However, this effect is significant on a 10 % level, which indicates that there is still a small difference between groups.

An additional analysis of probabilities of attaining the highest level of education depending on parental background indicated that parental separation affects respondents of different parental education differently. The comparison between them can be problematic, since the group that originate from an intact family background is ten times bigger than those who experienced parental separation. Additionally, the proportion of those who experienced parental separation is unevenly distributed among birth cohort, since it is much more common to experience parental separation if one is part of the younger cohorts. The parental educational levels also vary greatly between birth cohorts. The educational expansion has a confounding effect on the probabilities of attaining the highest level of education, since the oldest cohort have very few with high parental education, and the youngest cohort have a much larger proportion of highly educated parents. Compared to the latest cohort, 1966-1980, all of the previous cohorts had lower probabilities of attaining the highest level of education, regardless of family background. For those born 1905-1946 growing up with an intact family had stronger negative effect on educational attainment than it had for those who experienced parental separation. This could be an indicator of the group that experienced divorce or not. In the beginning of the century, divorce was more common among the highly educated, and parental education is still the strongest indicator of personal educational level. If one originates from highly educated parents, one might attain the highest level of education regardless of the experience of parental separation. The probabilities of attaining the highest level of education was more negatively affected by parental separation if the respondents had high parental education. For those with middle parental education the group that experienced
divorce had higher probabilities of attaining the highest level of education than those who originated from an intact family. This indicates that selection due to social origin characteristics such as parental separation cannot be excluded when analyzing educational attainment. It is not surprising that selection cannot be excluded, since this is generally acknowledged in research on parental separation penalties (Bernardi, Härkönen, Boertien, Andersson Rydell, Batstsait & Mortelmans, 2013). The road from social origin to social destination seems paved with multiple intertwined processes, and parental separation is part of those processes. The probabilities of reproducing one’s parental education decreases if one experiences parental separation, but that effect seems to differ between groups of different social origin. Experiencing economic hardship does not seem to have a negative effect on the probabilities of reproducing parental education, which is in line with what Breivik and Olweus (2006) found when they compared Norwegian children to children from the U.S. Experiencing conflict in the childhood home, on the other hand, negatively affects the probabilities of reproducing parental education, lending support to the stress/trauma hypothesis that the stress induced following a parental separation negatively affects the children’s social outcomes later in life. The fact that parental separation has a negative effect on educational reproduction and attainment indicates that parental separation indeed posts a disruption of the transmission of educational and social capital (Coleman, 1988) that mainly takes place in the childhood home.

Discussion

Contemporary Sweden bears the hallmark of a society with a low degree of closure, with a lot of opportunities for individuals to accrue capital outside the own social group (Coleman, 1988). Intergenerational transmission of educational attainment, and the function and value social capital has in that process, should hence be less functional and devaluated in Sweden. The educational expansion in Sweden during the 20th century has allowed the middle class to grow, and in such a context, the value of education decreases. High social fluidity should be a hindrance to highly valued social capital, since the fluidity indicates an equalization of opportunities regardless of social origin. The educational expansion in Sweden could be the reason for the small differences shown in this paper, but a difference still exists. The probability of reproducing parental education decreases if one experiences parental separation, and this could be an indicator of the disruption of transmission of capital that parental separation entails. Experiencing conflict in the home, which is highly correlated to experiencing parental separation also has a negative effect on educational reproduction
patterns. This supports the stress/ trauma hypothesis about the negative stress children of divorce experience, and that this theory has bearings on the future educational attainment of children that experience parental separation. When analyzing the probability to reproduce or surpass parental education, a more detailed measure of educational levels would be beneficial. In order to do a meaningful comparison between parental education and educational level, educational levels were divided into three categories; low, middle and high education. These measurements are crude, because the data did not allow for more levels (for parental education). Additionally, 72% of all respondents have low parental education, and can therefore by default not experience lower social mobility, as measured in this study. This could explain why previous research show more robust empirical evidence of parental separation penalties on educational reproduction, than this study does.

**Suggestions for further research**

In this study, educational level is used to measure the intergenerational transmission of socioeconomic status, since parental educational level still is a forceful indicator of educational attainment. Another way to measure the educational reproduction could be to investigate what percentile of the national educational level children attain. If the parental education is in the 90th percentile of the national educational level, what does the probabilities of reproducing or surpassing that educational level look like, depending on parental separation? Future studies might also benefit from using another measurement of socioeconomic outcomes. A common way to measure social adult outcomes within Economics is returns to education. Using Mincer’s (1974) equation, economic researchers measure the return of investment in human capital by rating the monetary reward from educational length. The assumption would then be that investment in education will lead to an increase in human capital, which subsequently leads to higher income over the course of life. Future studies on the intergenerational transmission of socioeconomic status might benefit from using return to human capital for different generations as a proxy of reproduction of inequalities instead. A way to design such a study could entail the comparison of the return rates intergenerationally, and in that way capture the patterns this study aimed to examine. Subsequent analyses could be focused on disentangling the multi-faceted patterns found in contemporary research on parental separation penalties.
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