Consequences of parental divorce and family structure on children's outcomes in European societies: individual, cohort and country explanations.

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To my husband, Jorge

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Summary

The aim of this dissertation is to expand the European literature on the effects of parental divorce and family structure on children's well-being, paying special attention to the micro and macro-level explanations of these effects. The micro-level explanations are analyzed in two chapters. In one chapter, I study the mediating and moderating role of family income, parental supervision and children's psychological problems of the effect of parental divorce on children's educational level in the United Kingdom. The study shows that for children from divorced families having psychological problems at age 10 have more long-term consequences than for children from intact families. Another chapter demonstrates that in most western countries, the effect of growing up in a single-mother family on arriving late for school remains significant even after taking into account several types of family's and children's resources, such as the mother's educational and occupational level, home possessions, cultural resources, and the mother's type of work. It is also shown that in most countries, these family's and children's resources do not moderate the effect of family structure on arriving late for school. In the other three chapters, the hypothesis of whether the impact of parental divorce on children's well-being decreases when it becomes more common and society becomes more adapted to it is tested. Two strategies are used in order to test this hypothesis. A strategy adopted is that of comparing the effect of parental divorce and family structure between countries. In two chapters is tested whether the effect of parental divorce and family structure on parent-child contacts, and on arriving late for school is lower in Social democratic countries (with high divorce rates) than in other countries (with low divorce rates). It is found that the effect of parental divorce and family structure on children's outcomes is similar or even greater in Social democratic countries than in other countries. Another chapter analyzes whether the association between parental divorce and children's psychological adjustment in 19-34 year olds (i.e. born 1934-1949 and 1966-1981) has changed between two Swedish generations, and finds that the magnitude of this association has not decreased over time. As a result, no evidence in favour of the hypothesis mentioned above is presented in this dissertation. In the last chapter, several macro-level explanations of the effect of family structure are tested, and unlike previous studies, the country gap in the mother's education is found to have an important role in moderating the effect of family structure on arriving late for school. Taking into account the findings of this dissertation, several innovative policies for helping children and families are suggested in the conclusion.

Resum

L'objectiu d'aquesta tesi és ampliar la literatura europea sobre les conseqüències del divorci i de l'estructura familiar en els fills posant especial èmfasi, en les explicacions micro nivell i macro nivell d'aquests efectes. En dos capítols s'analitzen les explicacions micro nivell. En un d'aquests s'estudia si els ingressos familiars, la supervisió dels pares, i els problemes psicològics dels fills expliquen o moderen l'efecte del divorci en el nivell educatiu dels fills en el Regne Unit. S'observa que pels nens de famílies divorciades tenir problemes psicològics a la edat de 10 anys té més conseqüències a llarg termini que pels nens de famílies intactes. En un altre capítol, es comprova que, en la majoria de països occidentals viure en una llar monoparental està relacionat amb arribar tard a l'escola tot i tenir en compte diferents tipus de recursos

com el nivell educatiu i ocupacional de la mare, el tipus de treball de la mare, els recursos culturals de la llar... També es constata que en la majoria de països aquests recursos no moderen l'impacte de viure en una família monoparental. En la resta de capítols es contrasta la hipòtesi segons la qual les conseqüències del divorci i de l'estructura familiar disminueixen en una societat quan el divorci és més freqüent i aquesta s'ha adaptat més a aquest canvi social. Aquesta hipòtesi es comprova utilitzant dues estratègies. En primer lloc, en dos capítols es compara si l'efecte del divorci i de l'estructura familiar en els contactes entre pares i fills i en arribar tard a la escola és menor en els països socialdemòcrates que en la resta de països. Es constata que en els països socialdemòcrates aquests efectes són similars o fins i tot majors que en la resta de països. En un altre capítol s'analitza si l'associació entre el divorci dels pares i el benestar psicològic dels fills de 19-34 anys ha canviat en dues generacions sueques. S'observa que la magnitud d'aquesta associació no ha disminuit en el temps. Per aquests motius, en aquesta tesi no es troba cap evidència a favor de la hipòtesi mencionada anteriorment. En l'últim capítol es testen diferents explicacions macro nivell de l'efecte de l'estructura familiar. A diferència d'altres estudis, les diferències del nivell educatiu de la mare per països moderen l'efecte de l'estructura familiar en arribar tard a l'escola. Així doncs, tenint en compte els resultats obtinguts en aquesta tesi, en la conclusió es proposen diferents polítiques innovadores destinades a promoure el benestar dels nens i de les famílies.

Introduction

Today, children are living in a world that is changing far more dramatically than it was a century or even several decades ago. As Prior and Rodgers (1996) note, far more significant than Internet-driven changes, or the possibilities of genetic engineering are transformations in the most fundamental of structures: the family. Family change is not new, since some children in the past also did not live their entire childhood with their two biological parents, because of parental death, one parent leaving home or being imprisoned. What is different today? The main reason for family change is not more death, but parental separation or divorce. The percentage of children experiencing parental separation is higher today than in the past since while parental separation or divorce was rare in most western countries at the beginning of the twentieth century, today it is a life experience for an increasing proportion of western children. Indeed, divorce rates rose substantially in the United States, from 2.2 in 1965 to 5.2 in 1980, and then declined to 3.7 in 2007 (see table 1). In the European Union of 27, divorce rates rose by 400 per cent in forty years, since the number of divorces per 1,000 people increased from 0.9 in 1965 to 2.0 in 2005 (see table 1). Furthermore, since the new millennium, around two million Europeans and two million Americans have divorced each year, and many of them have children. The number of cohabiting couples with children is also increasing in all OECD countries, and these couples appear to be less stable than married couples (Kiernan, 2004). Moreover, this huge demographic change has been accompanied by a profound cultural transformation: in one hundred years, we have moved from the stigmatisation of divorcees, in the early twenty century, to the adoption of social norms that make divorce not only acceptable but even essential in certain circumstances at the beginning of the twenty-first century (Furstenberg, 1999).

These changes have led to various concerns, some of which focus on their economic implications, others on the effects on children's development, and still others that see them as moral problems linked to the breakdown of the family as an institution (Ellwood and Jencks 2004). In this dissertation, I focus on the second concern, i.e. the effects of parental divorce on children's development, taking into account various dimensions of children's well-being, especially in the European social context. Several studies report how children living in divorced and other single parent families tend to have lower levels of economic well-being, and how the cross-national variation in this

gap is closely related to support from the welfare state (e.g., Vleminckx and Smeeding 2000; Heuveline and Weinshenker 2008). Although this gap provides an explanation for some of the outcomes I focus on, my main area of interest is not the economic consequences of divorce, and I also do not attempt an ethical analysis of divorce.

A review of the European literature on family change shows three important characteristics that are worthy of mention. First, several European social theorists such as Bauman (2003), Giddens (1995), Lipovestky (1990, 1994a, 1994b) have theorized on family change and love. However, their books, which have heavily influenced our understanding of family change, have not deepened its possible negative effects. Indeed, the German sociologists Ulrich Beck and Elisabeth Beck-Gernsheim (2002), for example, consider that the increase of parental divorce in Europe is something positive, which prepares children for the difficulties that they will face in adulthood. Second, most European empirical studies on divorce focus on the causes of divorce and separation, but few of them study the possible consequences of divorce in Europe. Third, most of those analyzing its consequences only take adults and not children into account, and only study one dimension of well-being, i.e. economic well-being. In fact, compared with the American literature, there are much fewer studies on the effects of parental divorce on children in Europe than in the United States. For this reason, one of the aims of this dissertation is to increase the number of European studies on the impact of parental divorce and family structure on children's outcomes, focusing especially on the micro and macro-level explanations for it.

A. Main questions, Spanish public debate and social importance of family change

Spain has experienced a radical demographic and cultural transformation during the last decade. First, as Table 1 shows, the divorce rate rose by 0.3 from 1990 to 2000 (from 0.6 in 1990 to 0.9 in 2000), while the upsurge in divorce rates from 2000 to 2004 was also 0.3 (from 0.9 in 2000 to 1.2 in 2002). In other words, the absolute increase has been the same during the decade of the nineties than during only the first three years of 2000s decade. Second, since 2005, when a new divorce law ending the requirement for separation to obtain divorce was adopted, the increase in divorce has been even sharper, as has the total increase in marital disruptions (separation and divorce) (Flaquer and

Garriga, 2009). In fact, as Table 1 shows, the current divorce rate in Spain is one of the highest in the world. Meanwhile, Becerril (2008) finds that acceptance of divorce has increased substantially over the last 10 years, and Spain is now one of the countries in the world where divorce is most widely accepted, but, at the same time, there is a non-negligible part of the population with traditional attitudes. For these reasons, it can be said that the demographic and cultural change that Spain has experienced over the last ten years cannot be compared with any other western country.

Table 1. Divorce rates (number of divorcees per 1000 population) from 1960 in some western countries.

	1960	1980	1990	2000	2001	2004	2005	2006	2007
European Union 27	:	1.5	1.6	1.8	1.9	2	2	:	:
Spain	0	0	0.6	0.9	1	1.2	1.7	:	2.8
Finland	0.8	2	2.6	2.7	2.6	2.5	2.6	2.5	2.5
Sweden	1.2	2.4	2.3	2.4	2.4	2.2	2.2	2.2	2.3
United Kingdom	0.5	2.6	2.7	2.6	2.7	2.8	2.6	:	2.4
Norway	0.7	1.6	2.4	2.2	2.3	2.4	2.4	2.3	2.2
United States	2.2	5.2	4.7	4.2	:	:	3.6	:	3.7

Source: Eurostat.

However, unlike other western countries, the public debate on divorce in Spain has mostly focused on the first and third concerns mentioned above, i.e. on the economic and moral consequences of divorce, and less attention has been paid to the second concern, i.e. on the consequences of parental divorce on children. This is possibly due to the fact that this latter area has been studied by few Spanish scholars, with some honourable exceptions. For this reason, even if this dissertation does not focus exclusively on Spain, because of the lack of Spanish data available for the study of this topic, the main questions of this dissertation have been chosen in order to contribute both to answering the main questions opened in the scientific debate and to providing a small piece of empirical evidence regarding the main questions or assumptions in the Spanish public debate on divorce. A review of the most important scientific literature, commentary pieces in Spanish newspapers and special reports about divorce and family structure shows there are two assumptions that are not clearly demonstrated by research (Solé, 2006). First, most are only concerned with the lower household income that single-parent families have (mostly due to divorce) compared with two-parent families. Few consider the possible effects of parental divorce or family structure on children, and of these, most consider that the income gap is the most important and sometimes the

unique explanation for the negative effect of family structure or divorce on children. Second, it is generally assumed that in countries such as Nordic countries, which have more generous family policies and liberal social attitudes and divorce laws, the negative effect of parental divorce is lower or even does not exist. These two assumptions within the Spanish debate have not been clearly demonstrated, and are related to two important scientific questions, such as the micro- and the macro-explanations of the effect of parental divorce. The main questions in my dissertation are therefore as follows: which factors mediate the effect of parental divorce on children? Which factors moderate this effect? Does the effect of parental divorce differ between countries, and between generations? What are the factors that explain these country differences?

Moreover, I would like to stress that these questions are related to two fundamental questions that our societies are facing: is family change a simple transformation of the family landscape, or does it have negative consequences for future generations? Can we eliminate the possible negative consequences of this demographic change? In other words, how important is family change, and can we adapt to it? In order to evaluate the importance of family change, the first strategy that has been used in the literature is determining if the effect of parental divorce is causal or not, since, if this effect is not causal, this change should not worry us. However, while the questions about the causality are indeed very important, I have studied them only in the first chapter of the dissertation, because the datasets used in the others do not enable the issue of causality to be fully addressed. Nevertheless, I consider that questions about the micro and macro-level explanations of the association of parental divorce and children's well-being are related to the question about social importance of family change: if the effects of parental divorce are causal, but society can adapt to this social change and eliminate or substantially reduce its possible negative effects; then the increase in parental divorce is not a social change that should worry us. In other words, a new social change is less important if we find out how to adapt to it.

B Micro-level explanations of the effect of parental divorce and family structure and policy implications

Studies on the factors that moderate or mediate the effect of parental divorce[1] are very important in order to inform policies for children experiencing divorce. In fact, the precise importance of the various explanations for the effect of parental divorce is essential for policymakers when carefully designing policies for these children. However, research on these issues has mostly focused on United States and less is known about the European context with the exception of United Kingdom. In fact, Amato and James (2010) in their review of European literature state:

> *Although a substantial number of American studies have investigated the factors that mediate or moderate these associations (parental divorce and children's well-being), a smaller number of relevant studies appear in the European literature (p. 9) (...). Nevertheless, it would be useful to have new research on potential mediators such as declines in standard of living following divorce, the quality of post divorce parent – child relationships, the extent to which former spouses engage in cooperative, coparenting, and additional stressors that may follow divorce, such as moving, changing schools, and experiencing, new family transition .Similarly, new European research could examine the potential role of moderators such as the child's age at separation, whether the parents are married or cohabiting, and the child's own resources (self-esteem, self-efficacy, and coping strategies and skills(p. 10).*

In addition, one of the shortcomings of the European literature studying the factors that mediate or moderate the effect of parental divorce is that some explanations have received more attention than others[2]. Most studies focus on the economic hardship explanation. This explanation is based on the fact that divorce reduces a family's economic well-being, which is very important for children's well-being, and especially for their educational outcomes (Amato, 1993). This is not surprising, taking into account most European datasets contain information on economic variables of the

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[1] From this section onwards, the phrase "parental divorce" to cover both parental divorce and separation is used throughout the dissertation.

[2] The following chapters contain a systematic review of the micro and macro-level explanations.

family but only a few have measured other dimensions of the family, such as quality of parenting and parents' and children's psychological well-being.

The economic hardship explanation receives strong support in the American literature (Sigle-Rushton and McLanahan, 2004) but it is less clear in Europe, since the findings are contradictory and are not always related to the type of welfare state. In other words, there are opposite findings in the same country or countries with similar types of welfare states. Without providing an extensive overview, some of the most important studies in the European literature obtain the following findings. Jonsson and Gähler (1999) show that family income mediates the effect of parental divorce on children's educational attainment in Sweden to a limited extent. Hampden-Thompson (2009) finds that the effect of growing up with a single mother on test scores is substantially explained by parental economic characteristics in Ireland and the United Kingdom, but this is not the case in Norway, Sweden, Denmark and Finland. By contrast, Breivik and Olweus (2006), obtain strong support for the economic hardship explanation, since this mediates an important part of the impact of family structure on several dimensions of children's well-being in Norway and the United States. Similarly, there are several studies that strongly support the economic hardship explanation in the United Kingdom: Kiernan and Mensah (2009) show that poverty explains a substantial part of the effect of family structure on young children's intellectual and behavioural development; McMunn et al., (2001) find that the high prevalence of psychological morbidity among children of single mothers is a consequence of socio-economic effects; and Kiernan (1997) demonstrates that family hardship mediates an important part of the negative effect of parental separation on children's educational attainment. However, again in the United Kingdom, Kiernan and Cherlin (1999) and Chase-Lansdale, Cherlin, Kiernan (1995) show that financial hardship explains a small part of the effect of parental divorce on the offspring's partnership dissolution and psychological well-being.

Due to these contradictory findings of European research, I therefore consider that it is very important to determine the importance of the economic hardship explanation in the European context, because this is related to questions about the social importance of divorce and the state's ability to adapt to this new social change. In fact, if the negative effect of parental divorce on children's well-being is only explained by the economic

situation of the family after the event, this means that it is not divorce *per se* that has negative effects on children, but the negative conditions associated with it (McLanahan and Bumpass, 1988). This also implies that it is easier for society to adapt to this new social change, since as McLanahan and Sandefur (1994) argue, government is in a better position to increase income than other types of family resources that are more intangible, such as the quality of parenting or children's emotional well-being. For these reasons, one of the aims of this dissertation is to study the mediating and moderating role of the family's economic situation on the effect of family structure and parental divorce in various European contexts – e.g. Sweden, the United Kingdom, Continental and Southern European countries -and on different types of outcomes, such as the offspring's educational, behavioural and psychological outcomes.

Another goal of this dissertation is to improve the European literature on non-monetary explanations. Most European governments are focusing their help for children of divorce on monetary transfers, and less is being done in other areas, such as the quality of parenting or children's psychological well-being. Besides, explanations related to the quality of parenting and the relationship with the non-custodial parent have attracted the attention of many American studies, but few European ones have taken these explanations into consideration. However, several European studies should be mentioned. Kiernan and Mensah (2009) and Kiernan and Huerta (2008) show that maternal depression and quality of parenting mediate and moderate part of the effect of family structure on children's behavioural and cognitive outcomes in the British generation born in 2000. Furthermore, Breivik, Olweus and Endersen (2009), using Norwegian data, find that mother-child conflict and parental monitoring are the most potent mediators between residing in a divorced single-mother household and adolescents' anti-social behaviour and substance abuse.

Likewise, a substantial body of research, also in Europe, shows that parental divorce has a negative effect on children's emotional well-being (Sigle-Rushton, Hobcraft and Kiernan, 2005; Chase-Lansdale, Cherlin, Kiernan, 1995; Størksen et al, 2006). However, few studies focus on the mediating and moderating role of children's psychological well-being on the effect of parental divorce on children's educational level. To my knowledge, no American or European studies evaluate the importance of

this mechanism. I consider that ascertaining the importance of the psychological mechanism in explaining or moderating the effect of parental divorce is very important from a policy point of view, since in some European countries, policies pay little attention to mental health services for helping children experiencing divorce. For these reasons, this is one of the goals of one of the chapters of this dissertation.

In conclusion, more European research about the mediating and moderating factors of divorce is needed. This is why this dissertation takes into account the economic hardship explanation of the effect of parental divorce, as well as other mediating and moderating variables such as the quality of parenting, the children's psychological well-being, the cultural capital, the mother's educational and occupational level, and the child's age when the parents divorced.

C   Macro-level explanations of the effect of parental divorce and family structure and policy implications

There are few studies on the effect of parental divorce on children comparing different generations, and even fewer have dealt with the question of differences between countries. Most research has been restricted to one society and a single generation (Dronkers, Kalmijn and Wagner, 2006). American scholars, who have done most of the research in this field, have produced very few studies comparing the United States with other countries, such as those in Europe. However, American and European researchers have recently stressed that in order to improve our knowledge about divorce, it is essential to encourage studies comparing different countries or/and generations. The American sociologists Amato and James (2010), in their review of American and European literature of divorce, say:

> *(..) we need a clearer understanding of which aspects of divorce are universal and which aspects are specific to countries with particular constellations of historical, cultural, structural, and legal characteristics (p.10).*

Similarly, the European sociologists Dronkers, Kalmijn and Wagner (2006) in their special issue about causes and consequences of divorce argue:

Divorce and separation seem to be highly private decisions, based on considerations made by individuals and couples. (..) This is an incomplete view. Not only are the individual decisions on divorce and separation clearly influenced by the social characteristics of the involved individuals, but they are also influenced by the characteristics of their societies and their affiliation to certain marriage cohorts (p.479).

There are good reasons for arguing why it is important to improve European comparative research in this field. On the one hand, as mentioned above, recent decades have seen a rise in the divorce rate in Europe. The probability of divorce or separation among married or cohabiting couples has increased in all European societies. This indicates that the increase in family disruption cannot be attributed to factors that are idiosyncratic to a particular society (Amato and James, 2010). Several scholars have noted that these changes are driven by a variety of factors, including modernization, women's increasing education and economic independence, a decline in the influence of religion, an increase in individualism and a corresponding decline in communalism. On the other hand, even if these changes are affecting all European societies and point to a common trend, there are important differences between them. Hantrais (2004) says that European states differ substantially in the way that they face family change, since some have chosen to ignore it and others to adapt. This difference in terms of the degree of adaptation may imply that the effect of parental divorce is lower in some countries than in others. Dronkers, Kalmijn and Wagner (2006) stress that there are four main differences that can moderate the effect of parental divorce on children.

First, as shown in table 2, divorce rates are higher in some countries than in others - it is 3.4 in Lithuania and only 0.8 in Greece and Italy. The same is true for the percentage of children that live in single-parent families – the rate is around 23% in the United Kingdom and less than 10% in Portugal. There are also important differences in the percentage of children born outside marriage: the figure is only 5% in Greece, but more than 50% in Norway.

Table 2: Divorce rates, percentage of children born outside marriage and percentage of children living in single-parent families for selected European countries and United States

	% births outside marriage 2007	% of children living in sole-parent families	Divorce rate 2007	Mean: divorce is justifiable
Austria	38.2	15.9	2.5	5.9
Denmark	46.1	17.4	2.6	7.3
Finland	40.6	15.3	:	6.6
France	50.4	13.3		6.3
Germany	30	13.4	2.3	5.9
Greece	5	7.4	1.2	6.3
Ireland	33.2		0.8	4.8
Italy	20.7		0.8	5.1
Lithuania	29.2	18.3	3.4	4.7
Luxembourg	30.7		2.3	6.1
Norway	54.5		2.2	5.9
Poland	19.5	15.5	1.7	4.6
Portugal	31.6	9.8	2.4	5.5
Spain		14.9	2.8	6.1
Sweden		21	2.3	7.8
Switzerland	16.2		2.6	6.4
United Kingdom	43.7	22.9	2.4	5.5
United States		25.8	3.7	5.9

Source: OECD Family Database, Eurostat and World Values Survey 1999/2001.

Secondly, as mentioned above, the negative effect of parental divorce on children is often explained by the poverty of mother-headed single families. Several scholars stress the sharp difference between European welfare states, and the different way that they treat single-parent families (Esping-Andersen, 1990; Hampden-Thompson, 2004). Dronkers, Kalmijn and Wagner (2006) argue that family policies might reduce the degree of poverty in mother-headed single families, which might lead to differences in the negative effects of parental divorce between European societies.

Thirdly, even if justification for divorce has increased in all European countries over the last forty years, Table 2 shows that there are still important differences between them: from a scale of 1 (never justifiable) to 10 (always justifiable) points, Sweden is the country with the highest tolerance of divorce (mean of 7.8) and Poland the country with the lowest (mean of 4.6). It has also been argued that the stigmatisation of divorcees and their children by the society around them explains part of the negative effect of parental divorce on their children. If true, the consequences of divorce should become smaller when divorce rates increase, since when divorce is a more commonplace phenomenon the level of stigmatisation also decreases. If so, as Dronkers, Kalmijn and Wagner (2006) state: *policy makers do not need to worry about the divorce rates but only need to*

address the stigmatisation of divorce to counter the relation between inequality and divorce (p.479)

Fourthly, divorce, as a part of the law concerning marriage, is recognized in all European countries, with the exception of Malta, but the different European divorce systems vary a great deal. Some countries have adopted a no-fault divorce law and others maintain the grounds of fault in their law. Many legal systems are more or less reluctant to grant a divorce upon the request of only one of the spouses but others basically grant unilateral divorce (Boele-Woelki, Braat and Summer, 2003). Some divorce systems try to prevent divorce more than others, including a long separation period as a requirement for obtaining a divorce. It has been argued that differences between divorce laws may also affect the consequences of divorce, for example, more liberal divorce laws might dampen the negative effects for children, because they prevent long lawsuits and thus the intensity and length of the parental conflict, and because there should be less stigmatisation of divorced people and their children if laws are liberal (Dronkers, Kalmijn and Wagner, 2006).

In short, European countries offer an important opportunity for comparative studies because they share some cultural and demographic characteristics and at the same time they differ in some important characteristics that can potentially moderate the effect of parental divorce on children. However, very few studies compare the effect of parental divorce on children in different European countries. Some of them are: Tomassini et al., (2004) study the effect of parental divorce on parent-child contacts between elderly parents and their children in four European countries and Kalmijn (2008) analyzes the same dimension; Pong, Dronkers, Hampden-Thompson (2003), Hampden-Thompson and Pong (2005), Hampden-Thompson (2009) and Esping-Andersen (2007) focus on the effect of single motherhood on test scores; Dronkers and Härkönen (2008) analyze the intergenerational transmission of divorce in different European societies; Wagner and Weiß (2006), in their meta-analytical study, compare the association between parental divorce and the divorce risk of the offspring in different European societies; Kiernan (2004) study the effect of parental divorce on partnership formation and dissolution in several European countries; Hobcraft (2009) analyze the differences between adult children from intact and non-intact families on income, partnership status

and mental and physical health; and Prokic and Dronkers (2009) study the effect of parental divorce and children's attitudes to society.

The number of studies adopting a multilevel approach, which is needed to specifically understand the relative importance of family policies, divorce laws, divorce rates and degree of stigmatisation in order to moderate the effects of parental divorce, is even more scarce. Pong, Dronkers, Hampden-Thompson (2003), Hampden-Thompson, (2004), Garib, Martin Garcia and Dronkers (2007) and de Lange, Dronkers and Wolbersand (2009) use this approach in order to determine the moderating role of family policies and demographic characteristics of the countries in the effect of family structure on test scores. Similarly, Dronkers and Härkönen (2008) apply the same technique in order to evaluate the importance of divorce laws, demographic characteristics, family policies and values in the intergenerational transmission of divorce. Kalmijn (2008) also analyzes whether the effect of parental divorce on parent-child contacts is lower in countries with more egalitarian gender values. In conclusion, there are few comparative studies of the effect of parental divorce between European countries and an even lower number using a multilevel approach. For this reason, one of the aims of this dissertation is to address this gap in the literature. Several comparative studies are therefore undertaken and when possible, if the number of countries is enough, a multilevel analysis is carried out.

D   Selection of countries and outcomes

As mentioned above, one of the concerns of this dissertation is to give part of the answer to two important questions that our societies are facing: is the increase of parental divorce in all western societies an important social change, and do we have the capacity to adapt to it? Taking these questions into account, I selected most of the countries and the outcomes of this study.

First of all, Scandinavian countries are studied in several chapters. Hantrais (2004), Goode (1993) and other scholars have noted that the Scandinavian countries are the best adapted to family change. For this reason, others have hypothesized that the effect of parental divorce should be lower in Scandinavian societies due to the generosity of their

welfare state, their liberal divorce laws and their social attitudes. Indeed, Breivik and Olweus (2006) in their research comparing the effect of parental divorce in Norway and United States state:

> *A fairly common view holds that children's risks of negative outcomes associated with family dissolution are generally small or even nonexistent in Scandinavia, and clearly smaller than what is usually found in the United States (Houseknecht & Sastry, 1996; Lassbo, 1988; Moxnes, Holter & Haugen, 1999; Sorensen, 1999; Trost, 1996; Wadsby & Svedin, 1996)(...)Relatively little research on children of divorce has been conducted in the Scandinavian countries, and previous research has provided conflicting findings. In some studies, the increased risks for children of divorce have been reported to be small or even absent (Gähler, 1998; Wadsby & Svedin, 1993, 1996), while other studies have found results comparable to what is typically found in US studies (Breidablik & Meland, 1999; Hansagi, Brandt & Andreasson, 2000; Jonsson & Gähler, 1997) (p.62)*

In addition, Breivik and Olweus (2006) also argue that one of the reasons explaining these contradictory findings is that the little research that has been done in Scandinavian countries has generally been based on relatively small samples. For this reason, I consider that it is very important to test the hypothesis that the effect of parental divorce is lower in Scandinavian countries than in other societies using large representative samples. If this hypothesis is true, it means that it is possible to adapt to the family change. Other governments and societies should therefore emulate what is taking place in Scandinavia. For this reason, Scandinavian countries are compared with other European or Western countries in several chapters, and one of the chapters in this dissertation focuses on Sweden. The aim of this chapter is to compare the effect of parental divorce on adult-children's psychological well-being in various Swedish generations that have lived in different divorce contexts -with different divorce laws, social values, and degree of development of the welfare state.

Moreover, in another chapter in this dissertation I study the United Kingdom for methodological reasons. As explained below, in one of the chapters, I test the mediating and moderating role of children's psychological well-being after divorce. To my knowledge, this country is one of the few in Europe that has longitudinal data

containing information of children's psychological well-being before and after parental divorce and children's educational level.

Finally, I would like to explain why I have chosen to study some dimensions of children's well-being rather than others. Amato and James (2010) argue that divorce can be viewed as a crisis (a temporary stressor to which most children adjust relatively) and others as a chronic strain (a state that persists more or less indefinitely). This issue is related to the social importance of divorce, since if the effect of parental divorce disappears when the children grow up, the increase of parental divorce in western societies is not a social trend that needs to be taken into consideration. In this dissertation, I do not address this issue directly by examining the effect of parental divorce throughout the life course as do Cherlin, Chase-Lansdale and McRae (1998), for example. Amato and James (2010) argue that an indirect way of studying this issue is to analyze the effect of parental divorce on adult-children outcomes. In most chapters, I therefore focus on the effect of parental divorce in adulthood. When it was not possible to study adult outcomes, I have preferred to analyze some outcomes that have not been considered by previous research. For this reason, as will be explained below, in the chapters using PISA 2003 data, I look at the variable of arriving late for school instead of studying test scores, as previous studies have done.

E Evolution of the dissertation

Regardless of the fact that this dissertation has several common questions, such as the micro- and macro-level explanations of the effect of parental divorce, it consists of five separated papers. A short overview of these is provided in this section.

In the first chapter I study the effects of parental divorce on children's educational level in a British generation that was born in 1970 using the longitudinal British data, the "British Cohort Study 1970". The importance of household income, the mother's quality of parenting and children's psychological problems in order to explain or moderate the effect of parental divorce is analyzed using Structural Equations Modelling. The main aim of this chapter is to test the importance of children's psychological well-being mechanism. No study has considered the possibility that

children's psychological problems after divorce might affect their educational. Only Biblarz and Raftery (1999) and Jonsson and Gähler, (1997) note the importance of children's psychological well-being as a possible mechanism, but they are unable to measure it in their studies. The main reason for the lack of studies on the psychological mechanism is that few surveys provide information about children's psychological problems both before and after parental divorce, and have information on long-term outcomes. As mentioned above, for this reason I have used the "British Cohort Study 1970", since it gives a unique opportunity to test whether, as a consequence of divorce, children's psychological problems in childhood can mediate or moderate the effect of parental divorce on children's educational level.

In the second chapter, co-authored with Michael Gähler, we undertake a cross-cohort comparison of the effects of parental divorce on Swedish adult-children's psychological problems. The aim of this study is to address two gaps in the existing literature. First of all, most studies on the impact of parental divorce on children's psychological problems are from Anglo-Saxon countries and few are from other countries, such as Sweden. Secondly, although many studies show that parental divorce is associated with psychological maladjustment in children, less is known about whether the magnitude of this association has changed over time. This is mainly due to a lack of repeated data, containing identical measures over time. In this chapter, we use data from two waves of the Swedish Level of Living Survey, conducted in 1968 and 2000, to analyze whether the association between parental divorce and children's psychological adjustment in 19-34 year olds (i.e. born 1934-1949 and 1966-1981) changed between the two survey years. In addition, we test whether the gap in family dissension and the perception of the economic conditions during childhood among children from divorced families and intact families has changed over time. We also analyze if these variables mediate the effect of parental divorce on adult-children psychological problems.

In the third chapter, co-authored by Marco Albertini, we study the existing relationship between parental divorce and the intensity of parent-child contacts, using data from Sweden, Denmark, Belgium and France from the Survey of Health, Ageing and Retirement in Europe (SHARE). We also provide additional evidence for the two declining hypothesis. On one hand, in the literature it has been suggested that the negative consequences of divorce on parent-child contacts decline as the age of the

child increases at the time of divorce *(individual declining hypothesis)*. To the best of our knowledge, among the studies considering the effect of divorce on parent-child contacts, only Booth and Amato (1994), using longitudinal data, examine how this effect varies according to the age of children at time of divorce. On the other, as mentioned above, some authors advanced the hypothesis that the consequences of marital instability in a specific society tend to decrease when divorces become more frequent and society becomes more adapted to it *(collective declining effect hypothesis)*. We compare the long-term effects of divorce on parent-child contacts in Sweden, Denmark, Belgium and France, which have very different divorce rates and histories, levels of social protection provided to divorced parents and social acceptance of divorce.

In the fourth and fifth chapter, the *OECD Programme for International Student Assessment 2003 data* of seventeen western countries is used. As mentioned above, most previous studies using this data and analyzing the effect of family structure focus on the variable test scores (Hampden-Thompson, 2004; Garib, Martin Garcia and Dronkers, 2007 and de Lange, Dronkers and Wolbersand, 2009). However, there is some evidence that growing up in a disrupted family has stronger effects on school behaviour outcomes than on achievement outcomes (McNeal, 1999) but there is little comparative research on school behavioural outcomes. For these reasons, in these two last chapters, the variable of arriving systematically late for school is analyzed. In the fourth chapter, the micro-level explanations of the effect of family structure on this outcome variable are studied, and the fifth chapter focuses on macro-level explanations.

The main aim of the fourth chapter is to test the moderating role of family's and children's resources in seventeen western countries. Several theories argue that children with more financial and human resources do not experience the negative effect of living in a single-mother family and consequently, there are no differences on children's outcomes by family type among those that are richer. In specific terms, it is tested whether children in single-mother family with a mother with the highest educational and occupational status are at less risk of arriving late for school than their counterparts with mothers with the lowest status. It is also analyzed whether children living in single-mother families with the most cultural or economic resources are less at risk of arriving late for school than children from this family type with the least economic or cultural

resources. Whether attending pre-primary education and the mother's type of job moderate the effect of the family structure on arriving late for school is also tested.

The fifth chapter focuses on the macro-level explanations of the effect of family structure on arriving late for school. First, the effect of living in a single-mother and mother and stepfather family in different welfare regimes is compared. Secondly, using Multilevel Models, the moderating role of attitudes towards single-mother families, divorce laws and family policies on the effect of family structure is analyzed. This chapter also focuses on another explanation that has not been considered by previous multilevel studies of the effect of parental divorce and family structure on children. Goode (1993) hypothesize that when divorce increases in a society, those with a lower educational level also divorce. Several empirical studies have confirmed this hypothesis in some countries (Härkönen and Dronkers, 2006; Chan and Halpin, 2005; Martin and Bumpass, 1989). Taking into account that the mother's education is related to household income and the quality of parenting, the effect of family structure should be lower in countries where mothers in disrupted families are better educated than mothers in two-parent families. In other words, the country difference in the mother's education might therefore have an important role in moderating the effect of the family structure. This last hypothesis is tested in the final chapter.

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Chapter 1

How Does Parental Divorce Affect Children's

Educational Level?

An Analysis of the 1970 British Birth-Cohort[3]

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1.1 Introduction

Research has shown that children from intact families have higher levels of educational achievement than children from divorced families (Amato & Keith, 1991a; Amato & Keith, 1991b; Sigle-Rushton and McLanahan, 2004). However, although the exact pathways that explain the differences between children from different family types remain unclear, most family policies and policy recommendations aimed at divorced families have mainly focused on improving their family income (Breivik and Olweus, 2006). The emphasis of policymakers on the income level of divorced families is not surprising, taking into account the fact that on the one hand, as Mayer (1997) points out, most social scientists consider income to be the most important influence on children and some believe that is the single most important influence on children's life chances; and that on the other hand, as McLanahan and Sandefur (1994) argue, government is in a better position to increase income than other types of family resources that are more intangible, such as the quality of parenting or children's emotional well-being.

However, many policy recommendations for children in divorced families have been largely derived from the perspective of economic deprivation (Breivik and Olweus, 2006), which is based on two assumptions that have not been clearly demonstrated by previous research: 1- family income is the most important factor in explaining differences in educational performance between children from divorced and intact families and 2- the effect of parental divorce is greater among poor families, after divorce, than in rich ones.

Moreover, although family policies pay little or no attention to other possible mediators such as the quality of parenting, some scholars since the 1990s have shown that there is a decline in parenting quality after parental divorce, and this decline might explain some of the differences between intact families and divorced families (McLanahan and Sandefur, 1994; Thomson, Hanson and Mclanahan, 1994; Elder and Russell, 1996). Because the literature has emphasized family income more than parenting quality, more research on this particular mechanism is needed.

In addition to loss of income and quality of parenting, children's psychological problems might also explain some of the differences between children from divorced

and intact families in terms of educational achievement, since several studies have shown that there is a decline in children's emotional well-being after parental separation (see Amato, 2001) and it is also well-known that children with psychological problems have lower educational performance (Jadue, 2002; Margalit and Shulman, 1996; Mercer, 1997). However, to my knowledge, no study has considered the possibility that children's psychological problems after divorce might have long term consequences. Biblarz and Raftery (1999) and Jonsson and Gähler (1997), are the only authors to outline the importance of children's psychological well-being as a possible mechanism, although they are unable to measure it in their studies. They only speculate that, after controlling for other possible mechanisms, the net effect of parental divorce might be explained with reference to the adverse psychological consequences of divorce. However, the net effect might be due to other unobserved variables apart from children's psychological problems. The main reason for the lack of studies on the psychological mechanisms is that few surveys provide information about both children's psychological problems before and after parental divorce and have information on long-term outcomes. The longitudinal cohort data from the British Cohort Study 1970 provides a unique opportunity to test whether children's psychological problems in childhood as a consequence of divorce can explain part of the effect of parental divorce on children's educational level.

Moreover, with a few exceptions, past research has investigated only one or two of the explanations at a time. This procedure has major methodological problems because the various factors posited as an explanation for the association between parental divorce and children's educational level are likely to be correlated. It is therefore possible to determine the contribution of a particular hypothesized mechanism only after controlling for the impact of the others (Simons et al., 1999). When proper controls are used, the effects reported for some explanations may turn out to be spurious or indirect through other factors (Simons et al., 1999). For this reason, the analysis in this paper has been carried out using structural equation modeling. This technique allows the three mediating variables - family income, quality of parenting and children's psychological problems -to be taken into account in the same analysis, together with their indirect effects.

This paper aims to analyze: 1- whether parental divorce has a net effect on children's educational level; 2- to what extent family income, parental supervision, and children's psychological problems after divorce explain this effect; 3- whether the effects of these variables on children's educational level differ by family type (divorced and intact families); 4- whether the effect of parental divorce on children's educational level differ by income level.

1.2   Theoretical explanations

1.2.1 Selection explanation

One of the most common explanations about the impact of parental divorce on children's well-being is the selection explanation. This perspective argues that the negative outcomes observed among children experiencing parental divorce and children from intact families are due to differences between the kind of people who divorce and the kind of people who remain married (Sigle-Rushton and McLanahan, 2004). Before marital break-up, families who will divorce are different from intact families in some observed and unobserved factors that are important in predicting parental divorce and negative outcomes (Ní Bhrolcháin, 2001). Although testing the selection explanation is methodologically difficult, most studies show that selection appears to account for some, but not all, of the differences in children's well-being (Sigle-Rushton and McLanahan, 2004; Cherlin, 1999).

The literature includes three main selection explanations: socio-economic selection (Jonsson and Gähler, 1997), conflict selection (Amato, 2001) and genetics selection. Family socio-economic factors are related to both children's educational outcomes and parental divorce (Härkönen and Dronkers, 2006; Lyngstad, 2004). In fact, Chan and Halpin (2008) find that in the United Kingdom, better educated women used to have a higher risk of divorce, but since the late 1970s their marriages have been more stable than those of women without qualifications. For this reason, the relationship between parental divorce and children's educational outcomes might be spurious for the youngest generations, since the difference in levels of educational achievement between children from divorced families and intact families might be not due to divorce per se,

but to the poorer socio-economic conditions of families that subsequently divorce compared with those of intact families. Studies by Furstenberg and Kiernan (2001) and Kiernan (1997) on British children born in 1958 (using the National Child Development Study) show that adults whose parents divorce during their childhood have a lower educational level than their counterparts in intact families, but these differences are attenuated when pre-divorce socio-economic factors, such as parental education and family financial hardship and other control variables are taken into account. The findings of these studies suggest that selection may be an important factor, but not an exclusive one, in the interplay between the divorce process and children's educational achievement. Furthermore, Sigle-Rushton, Hobcraft and Kiernan (2005) find that for British children born in 1970 (British Cohort Study 1970 data), parental divorce also has a negative effect on children's educational level even when socio-economic controls are included in the models. Moreover, American and Swedish studies also show that the effect of parental divorce on children's educational level remains significant when family income, parental education and other socio-economic factors prior to the parental divorce are taken into account (McLanahan and Sandefur, 1994; Jonsson and Gähler, 1997).

Meanwhile, the genetic selection explanation stresses that some parental characteristics have a genetic component, and these might be direct causes of dysfunctional family patterns and divorce, as well as children's problems. Studies comparing adoptive and biological children are scarce, but show that in adopted and biological children, the effect of parental divorce on behaviour problems is similar, but this effect is different for academic achievement and social adjustment (Brodzinsky, Hitt and Smith, 1993; O'Connor et al., 2000; Amato and Cheadle, 2008) which means that some genetic selection might exist. Finally, the conflict selection explanation emphasizes that the association between parental divorce and children's outcomes is explained by the conflict experienced before this event, since family conflict is associated with parental divorce and with children's well-being. Nevertheless, Hanson (1999) finds that parental conflict is partly but by no means completely responsible for the association between divorce and children's school performance.

1.2.2 Loss of family income

Divorce is often associated with a decline in material well-being. The economic resources of a household have to be divided in half, and both new households lose the advantage of economies of scale (McLanahan and Sandefur, 1994). Research has shown that most women suffer a substantial loss of income after marital break-up, whereas men's economic circumstances appear to be relatively unaffected or even improve slightly in some cases (Jarvis and Jenkins, 1999; Aassve et al., 2007). Children also experience a substantial fall in material well-being, since most of them live with their mothers after divorce. The negative association between parental divorce and children's educational achievement may therefore simply be a consequence of the economic hardship that often follows marital disruption. Mayer (1997) note that income can affect children's outcomes in many ways. The decline in the standard of living may lead to a reduction in children's access to enrichment activities, such as tutoring, after-school classes, or camp and a decrease in children's perceptions that their family can afford university. A poor family might not be able to afford university fees and other costs of university, such as campus accommodation. Furthermore, limited means may bring about a move to neighbourhoods with inadequate schools (McLanahan and Booth, 1989).

Even if economic decline following divorce is a relatively universal phenomenon for single parents, there are certainly great differences in how the state tries to cushion this deterioration. Andreß et al., (2006) in a comparison of Belgium, Germany, Italy, Great Britain and Sweden find that due the limited development of the British welfare state, British mothers are particularly vulnerable, and are considerably more dependent on the labour market as a means to maintain a reasonable level of economic self-sufficiency. The importance of family income as a mediating factor of parental divorce effect varies by country. In Sweden, the decline in family income accounts for a small proportion of the effect of family disruption on children's educational attainment (Jonsson and Gähler, 1997). In contrast, in the United States previous investigations have concluded that income differentials account for between 15 to 50 percent of the difference in high school graduation rates among children living in one- and two-parent families (McLanahan, 1985; McLanahan and Sandefur, 1994; Thomson, Hanson and McLanahan, 1994). Painter and Levine (2004), using an improved measure of income,

show that lower income accounts for most of the disadvantages of youths in single-parent families, but not for the disadvantages of youths in families with stepfathers in the U.S.A. Moreover, due to the limited development of the welfare state in the United Kingdom, Kiernan (1997) shows that family income mediates part of the negative effect of parental separation on children's educational attainment in that country. Nevertheless, it is important to note that even considering the generosity of the Norwegian welfare state, Breivik and Olweus (2006) find that in Norway, the role of the family's economic resources in mediating the effect of parental divorce on children's educational achievement is similar to the findings in a number of studies in United States. However, in assessing the influence of family income, it is necessary to separate the effects of family income from the effects of the decline in the mother's quality of parenting involvement, as well as from involvement by a non-residential father or other family characteristics. Most previous studies (McLanahan, 1985; McLanahan and Sandefur, 1994; Thomson, Hanson and McLanahan, 1994; Painter and Levine, 2004, Jonsson and Gähler, 1997) evaluating the mediating role of family income do not control for quality of parenting. It is therefore possible that the effect of family income might be upwardly biased if other mediating variables are not included in the analysis. Moreover, family income can have an indirect effect through the mother's parenting. Kiernan and Huerta (2008) show that financial hardship often leads to maternal psychological distress and disrupted parenting practices in both single-parent and intact families. The impact of reduced family income on the adjustment of children of divorce might therefore be expressed indirectly by its negative effect on the emotional well-being and quality of parenting of the custodial parent (Simons et at., 1999).

1.2.3 Quality of parenting

Authoritative parenting is positively correlated with adolescent school performance, whereas authoritarian and permissive parenting is negatively so (Dornsbusch et al., 1987). Authoritative parents give warmth and support to their children but they also control and supervise them. Although a few studies have reported an association between family structure and the level of parental warmth and support, the dimension of parenting most consistently linked to number of parents in the home is that of control and supervision (Simons, 1999). Divorced mothers control and supervise their children less than married mothers (Astone and McLanahan, 1991; Simons and Associates,

1996). Moreover, divorce is associated with a decline in the quantity and quality of the relationship between the children and the non-custodial parent (Amato and Gilbreth, 1999) which is usually the father, which means that the non-custodial parent has less chance to supervise the child. Moreover, Simons and Conger (2007) find that mothers and fathers have different parenting styles, since mothers are more likely than fathers to parent in an authoritative manner.

However, is the decline in quality of parenting after parental divorce the reason for the lower educational attainment of the children of divorce? I have found mixed evidence. Astone and McLanahan (1991) show that differences in parental behaviour account for only about 10 percent of the difference in dropout rates between children from single-parent and two-parent families. Similarly, Thomson Hanson and McLanahan (1994) find that parenting practices account for practically none of the difference in educational attainment between children from intact and non-intact families. Painter and Levine (2004) show that parental involvement explains a small part of the association between family structure and dropping out of high school. By contrast, Simons et al., (1999) find that the quality of mothers' parenting partly explains the relationship between divorce and conduct problems among adolescents. Moreover, McLanahan and Sandefur (1994) show that parenting practices account for over half of the difference in high school dropout rates between children in single-parent families and children in two-parent families. Similarly, King and Sobolewski (2004) show that adolescents from divorced families are worse off in a range of outcomes when they have weak ties with both their mothers and non-resident fathers. Due to this lack of consensus, I therefore consider that it is important to focus on this particular explanation of the effect of parental divorce on children's educational achievement.

1.2.4 Psychological perspective

Besides the decline in income and quality of parenting, children's psychological adjustment might explain some of the differences between children of divorced and intact families on their educational attainment. On the one hand, as mentioned above, children's psychological problems have a negative impact on their educational performance (Mercer, 1997). Abundant research shows that children from intact

families have better psychological well-being than children from divorced families (see Amato, 2001). However, Cherlin et al., (1991), in their famous longitudinal study, do not find that parental divorce has a negative impact on children's psychological well-being when pre-divorce family and children's characteristics are taken into account. In contrast, other longitudinal studies show that parental divorce has a negative effect on children's psychological well-being even when pre-divorce factors are considered (Hanson, 1999; Jekielek, 1998; Morrison and Coiro, 1999; Strohschein, 2005). Besides, Sigle-Rushton, Hobcraft and Kiernan (2005), using the same data that is used in this study (British Cohort Study 70), find that compared with children from intact families, children experiencing a parental divorce are significantly more likely to have a high anxiety and aggression score at age 10. Moreover, other studies show that parental divorce has negative effects on the adult children's psychological well-being (Sigle-Rushton, Hobcraft and Kiernan, 2005; Furstenberg and Kiernan, 2001; Chase-Lansdsle, Cherlin and Kiernan, 1995). However, why do children of divorced families have lower levels of psychological well-being than children in intact families?

The pathways that explain the differences between family types on this specific dimension are unclear, and more research is needed. Some explanations have focused on the effect that divorce has on several aspects of a parent's life and which in turn affect children's psychological well-being. Some studies show that family income explains part of the effect of parental divorce on children's psychological well-being (Thomson, Hanson and McLanahan, 1994; Morrisson and Cherlin, 1995; Asetline, 1996; Carlson and Corcaran, 2001; Wu, Hou and Schimmle, 2008), while others show that this variable is not a mediating factor (Simons et al., 1999). Second, as mentioned above, parental divorce affects parental practices, and some evidence suggests that these are related to children's psychological well-being (Kiernan and Huerta, 2008). Few studies have focused on this particular mediating variable. Simons et al., (1994) show that among children from divorced families, the quality of the mother's parenting is associated with externalising problems of boys and girls, and is also related to internalizing problems for boys. In contrast, Thomson, Hanson and McLanahan (1994) show that quality of parenting explains part of the effect of growing up in a stepfather family on children's internalizing problems, but this factor does not mediate the effect of growing up in a single mother family. Moreover, post-divorce conflict, non-

residential father involvement and the mother's psychological well-being after divorce also affect children's emotional health (Simons et al, 1999 and King and Sobolewski, 2004).

On the other hand, parental divorce might have a direct effect on children's emotional health, regardless of family and parental characteristics and involvement. Pryor and Rodgers (2001) define "trauma theories" as those theories which argue that parental divorce has a negative impact per se on psychological outcomes, notwithstanding other family and parental characteristics and involvement. Some "trauma theories" argue that the feelings of loss and abandonment that children might experience after parental divorce explain the decline of children's emotional well-being after this event (Pryor and Rodgers, 2001). In addition, another well-known argument is the so-called "attachment" theory (Bowlby, 1973, 1980), which stresses the fact that children have a need for a secure relationship with adult caregivers, without which normal social and emotional development might not occur. Parental divorce may lead to an insecure attachment by children to their parents (Waters et al., 2000) and this might explain the negative effect of parental divorce on children's psychological outcomes.

1.3 Data and sample selection

This study uses data from the British Cohort Study (BCS), a nationally representative, longitudinal study of a birth cohort in Great Britain. The BCS study follows the life of a cohort of children born in one week of April in 1970. The original sample provides information on over 17,000 births. Later waves are similarly designed, and include a wide range of socio-economic, demographic, psychological, health, and attitudinal measures of the children and their parents (Despotiduou and Shepherd, 1998). With each successive wave, the scope of enquiry has broadened from a strictly medical focus at birth, to encompass physical and educational development at the age of five, physical, educational and social development at the ages of ten and then to include economic development and other factors at 30 years. Few longitudinal surveys are as multidisciplinary as the BCS. Compared with many other studies, the multidisciplinary character of the survey allows a range of factors to be taken into account that might

explain the association between parental divorce and children's educational level, such as psychological well-being during the childhood.

I restrict the sample to children whose parents remained together until they were 21 years old (inclusive) and to children whose parents divorced or separated[4] between wave 1 (age 5) and wave 2 (age 10). I do not distinguish between children whose parents were cohabiting and those whose parents were married, since including only those that were married could produce a bias in the analysis. Among children living in divorced families at age 10 I only include those who lived with their mothers at age 10. I exclude children who were born to a single-parent family at birth or whose parent or parents died or if they were living in foster care and whose parents separated before age 5 or between 11 years and 21 years old. In order to create this sample, I use information on family structure collected at the waves when the children were 5, 10 and 30 years old.

Due to data constraints, my analysis is limited to those children who experienced parental divorce between 5 and 10 years old and those whose parents remained together until they were 21. Relevant information on the controls and mediating variables is only available in the first and the second BCS follow-up interviews at age 5 and 10. The sweep 0, when the child was born, does not provide any information on the most important control variables needed. There was a large non response rate to the third follow-up interview at age 16. Moreover, I only include in the analysis those children who lived with their mothers after divorce since as mentioned above, custodial mothers and custodial fathers have different parenting styles (Simons and Conger, 2007; Hetherington and Kelly, 2002). I would have liked to include children who lived with their father after the divorce in a separate analysis, but too few children had these living arrangements. The number of cases (n=150) is not big enough to undertake the analysis, when missing cases of meditating and control variables are taken into account. Furthermore, I restrict the sample to children whose parents remained together from

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[4] I do not distinguish between those children whose parents were cohabiting and those whose parents were married, because the number of children whose parents were cohabiting and then separate is low. For this reason, in the analysis, "parental divorce" also refers to parental separation and "parental separation" also refers to parental divorce.

birth until the age 21 (inclusive) since this age is around the time that most young people finish their university degree in the United Kingdom. However, I tried different cut-off points from 16 to 25 years old, and there was no substantial change in the results.

For the divorce group, I use the family structure variables from the first and second follow-up interviews (wave 1 and 2). All longitudinal studies lose individuals between waves and the BCS is not an exception. The target sample [5] in the first wave (at age 5) was 16,181, 13,135 of whom were successfully interviewed –which means a response rate[6] of 78.9%-. There was information on the family structure for all of them, and 11,752 (90.1%) were living with both natural parents from the birth to age 5. Of these, 1,499 had missing information on their family structure at the second follow-up (at age 10): this is mostly due to the fact that their families were not interviewed in this wave[7]. Combining information of both sweeps, I find that 437 children experienced parental separation between the first and the second follow-up interviews, and were living with their mother by the second one. Meanwhile, in order to create the group of children from intact families, I use information from the fifth follow-up interview, at age 30. The length of time between the waves means that sample attrition is inevitable, particularly at older ages. In wave 5 (at age 30), the non-response rate was 69.9%. Out of a target sample of 15,503, 10,833 were successfully interviewed, and 9,997 provided information about their family structure in childhood. The parents of these 767 cohort members remained together from birth to age 21.

1.4 Variables

1.4.1 The dependent variable

The main dependent variable is the highest level of academic or vocational qualifications attained at age 30. Most people have obtained their final level of

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[5] The target sample in the first interview was 17,287 babies at birth and then declined because of death of the cohort members or because they emigrated.

[6] The response rate is defined as the number of interviews achieved divided by the initial sample of cohort members.

[7] For the second BCS follow-up at age 10, the target sample was 16,586 cohort members, of which 14,350 were interviewed. Of those, there was information on the family structure of 13,715 children.

education by this age. When information on this variable is unavailable at age 30 (wave 5), I use information at age 26 (wave 4). The academic qualifications, in order of increasing attainment, are: the Certificate of Secondary Education (CSE) grades 2 to 5 (normally taken at the minimum school leaving age); the ordinary level General Certificate of Education (O level) normally taken at the minimum school leaving age); the advanced level General Certificate of Education (A level), normally taken at 18 years old; a degree or diploma (bachelor's degree or higher education diploma); or a higher degree (master's degree or doctorate). The vocational qualifications consist of National Vocational Qualifications (NVQs) and other vocationally based credentials of an equivalent standard. NVQs are based on national occupational standards, and are awarded for evidence of competency in work-based situations at 5 levels, reflecting increasing job complexity and personal responsibility. These academic and vocational qualifications are subsequently collapsed into 6 categories, reflecting increasing attainment: no qualifications, CSE grades 2 to 5/NVQ level 1 and equivalent, O levels/NVQ level 2 and equivalent, A levels/NVQ level 3 and equivalent, degree or diploma/NVQ level 4 and equivalent, and higher degree/NVQ level 5.

1.4.2 Explanatory variables of parental divorce

As explanatory variables for the effect of parental divorce, I use variables from the second wave when cohort members were 10 years old. I include variables that are related to each theoretical explanation. Family income is not a continuous variable. Parents were asked about the range of family's gross weekly income: under 35 pounds per week; between 35 and 49 pounds per week; between 50 and 99 pounds per week; between 100 and 149 pounds per week; between 150 and 199 pounds per week; between 200 and 249 pounds per week; 250 pounds or more per week. In order to create a continuous variable of family income, I calculate the mean for each range, but I use 17.5 pounds for the lowest range and 275 pounds for the highest range. Although there are several ways of adjusting household income, recent OECD publications (e.g. OECD 2009) use the square root scale. I therefore standardize this variable using the formula pounds per week / √ number of people in the household[8].

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[8] I found similar results using the OECD modified equivalence scale, which assigns a value of 1 to the head of the household, of 0.3 to each additional adult member and of 0.03 to each child (see appendix).

I also create an index that captures parental supervision. Parents were asked four questions referring to supervision: "Does your child go to the shops on his/her own? Does your child play in the street on his/her own?; Does your child go to the park or playground on his/her own? Does your child go on local buses on his/her own?". For each question, the response options were 1= almost every day, 2= about once a week, 3=seldom, 4=never. The index is calculated by adding up all answers. This variable has values from 4 (minimum) to 16 (maximum). The alpha reliability coefficient for the four items in this study is 0.63.

As stated above, the BCS70 allows children's psychological problems before and after parental separation to be taken into account. Children's psychological problems were measured on the Rutter Parental 'A' Scale of Behavior Disorder (Rutter, Tizard and Whitmore, 1970). This scale was completed by the parents -usually the mother- and was designed to measure behaviour-adjustment problems. However, only 15 items on the original scale were collected in wave 2. These items were summarized in a continuous variable. This takes values between 0 (no psychological problems) and 84 (highest psychological problems).

1.4.3 Control variables

To estimate our full models, I control for a variety of child and parental characteristics, all of which were measured in the first follow-up wave prior to any family disruption. One of the main limitations of the British Cohort Study 1970 is that the first wave contains no information about family income. For this reason, I use a proxy, namely the highest level of parental education completed by the father or by the mother. This variable has 6 categories: 1- No qualifications; 2- Low level vocational qualifications; 3- O-level or equivalent; 4- A-level or equivalent; 5- State Registered Nurse (SRN) or Certificated of Education (Teachers); 6-Degree.

Although the BCS70 dataset is rich in many domains, its ability to measure family processes, such as family conflict, is limited. There is no direct measure of family conflict, but there are other variables that can be considered proxies of prior quality of the marital relationship, such as the children's psychological problems and the mother's mental health prior to divorce (Dehle and Weiss, 1998; Coyne, Thompson and Steven,

2002). The mother's mental health was measured using the "Malaise Inventory" created by Rutter, Tizard and Whitmore (1970). The Malaise Score is a continuous variable based on a 24 –item battery of questions. As mentioned above, children's psychological problems were measured by the "Rutter A Scale of Child Behavior Deviance Test" based on the mother's reports. At the first follow-up interview, a 19- item battery was summarized in a continuous variable with values between 0 (no psychological problems) and 63 (highest psychological problems). Some items included in the original Rutter A-scale were excluded from this scale, mainly because of the high non-response rate on these items compared with the other items in the scale (Guide to the BCS70 5-year Survey Dataset, 1975). It should be pointed out that the "psychological problems at age 5" variable has 19 items, and this variable at age 10 has 15 items. I do not therefore have the same variable for children's psychological problems before parental divorce and afterwards, but they are broadly similar.

Other variables might be related to previous family relationships, such as "Father has read to the child to the child in the last week" or "Mother has read to the child in the last week". It seems reasonable think that parents who have a good relationship may read more to their child. These variables also measure quality of parenting.

Because the main dependent variable is the children's educational level at age 30, vocabulary test scores at age 5 before parental divorce is also included as a control variable. The test score at age 5 was derived from the English Picture Vocabulary Test (EPVT) which is an adaptation of the American Peabody Picture Vocabulary Test. The minimum value is −5 and the maximum is 3. It consists of a series of 56 sets of four different pictures, with a particular word associated with each set of four pictures. The child asked to point out the one picture which corresponds to the given word, and the test proceeds with words of increasing difficulty, until they make five mistakes in a run of eight consecutive items. The final item achieved is designated the ceiling item. The EPVT raw score is the total number of correct items occurring before the ceiling item. The resulting distribution of raw EPVT scores was skewed, and so the scores were transformed to give a standard normal distribution value (minimum=-5 and maximum=3) (Guide to the BCS70 5-year Survey Dataset, 1975). The final control variable is sex, in which 1 is female and 0 is male.

1.5   Structural equation modelling

Structural equation modelling (SEM) is a statistical approach that allows researchers to estimate and test models consisting of simultaneous equations. In this chapter, structural equation modelling for three main reasons is used. One advantage of the SEM model is that it enables the issue of causality to be addressed carefully, since it permits the spurious relationships caused by predetermined variables included in the model to be taken into account, as well as spurious correlation due to unobserved variables, by introducing correlations between the disturbance terms. It is therefore possible to observe the effect of parental divorce taking into account observed and unobserved family characteristics (such as parental conflict).

Another advantage of this statistical approach is that it enables the total effect of the explanatory variables to be disaggregated into direct effects (those that go directly from one variable to another) and indirect effects (those between two variables that are mediated by at least one intervening variable) (Bollen, 1989). It is therefore possible to disentangle the effect of parental divorce into direct and indirect effects; i.e. to observe the importance of family income, supervision and children's psychological problems in order to explain the effect of parental divorce on children's educational level. SEM model also enables multi-group comparisons to be made in order to observe if an effect is statistically different in certain groups.

Structural equation models in this paper are estimated on the basis of a correlation matrix. Polychoric and polyserial correlations for variables that are not continuous are used. These kinds of correlations provide better estimations of dichotomous and ordinal variables than Pearson correlations (Saris, VanWijk and Scherpenzeel, 1998). The PRELIS and LISREL programs enable data obtained from an ordinal scale to be analyzed, by estimating a matrix of polychoric and polyserial correlations developed from categorical data, and computing the asymptotic variance-covariance matrix for the estimation (Jöreskog and Sörbom, 1996a,b). For these reasons, the structural equation models in this study are undertaken using matrices of polychoric and polyserial correlations, and the asymptotic covariance matrix is estimated and used as input in the estimation of structural models. The analysis are carried out using the LISREL 8.51 computer program (Jöreskog and Sörbom, 2001). Jöreskog and Sörbom, (1989)

recommend using the Weighted Least Squares Solution (WLS), rather than the Maximum Likelihood Solution (MLS). The former provides better estimates of the Chi-square goodness-of-fit measures and standard errors for categorical and ordinal data than the latter. However, LISREL does not allow estimation of multi-group models using asymptotic covariance matrix.

Meanwhile, assessing the correctness of a structural equation model is essential in avoiding incorrect conclusions from empirical research. In order to evaluate whether a model fits the data, I report the chi2 test and the RMSEA. However, Saris, Satorra and Van der Veld (2009) show that these fit indices do not provide sufficient evidence on the fit of models, because they ignore the power of the test. For this reason, the models are adjusted using JRule software for the detection of misspecifications (Van der Veld et al.,2008) based on the procedure developed by Saris, Satorra and Van der Veld (2009). If a misspecification is detected, I introduce the reasonable adjustments suggested by JRule on a step-by-step basis.

1.6   Missing data

Table 1 shows the percentage of missing cases by family type for all the variables used in this paper. For children from intact families, the highest percentages of missing cases are in the variables of the first and second wave at age 5 and 10. As mentioned above, the intact group is created using family structure information in the fifth wave at age 30. This is because some of them were not interviewed in wave 1 or 2. In fact, some children that participated in the wave at age 30 did not take part in the waves at 5 or/and 10 years old.

Table 1. Percentages of missing cases by family type.

	Intact families	Divorce families	Total
Sex	7.4	0.0	16.4
Children's psychological problems at age 5	17.8	0.5	16.4
Mother's malaise at age 5	18.4	0.9	16.4
Mother having read to the child in the last week	17.4	0.0	0.0
Father having read to the child in the last week	17.4	0.0	0.0
Vocabulary test at age 5	17.4	0.0	0.0
Highest parental education at age 5	19.2	2.5	18.3
Educational level at age 30	0.0	28.7	1.6
Children's psychological problems at age 10	16.2	9.4	15.8
Family income at age 10	20.2	6.7	19.5
Parental supervision at age 10	13.6	2.8	13.0
N	7531	436	7967

For 270 children from intact families, there is information on their family structure and educational level at age 30, but there is no information about them in the variables at age 10 and 5 (comparison 1 of Table 2). Table 2 shows that there are no statistically significant differences in educational level at age 30 between those children for whom there is no information for the variables at 5 and 10 years old, and those for whom this information is provided.

Table 2: Means and percentages of children from intact families by groups of missing cases.

Comparison 1	Missing at age 5 and 10	No Missing at age 5 and 10
Educational level at age 30	2.61	2.61
Comparison 2	Missing all variables at age 10	No Missing at age 10
Educational level at age 30	2.43**	2.61**
Children's psychological problems at age 10	6.13**	6.95**
Mother's malaise at age 5	3.81	3.91
Mother having read to the child in the last week at age 5	71%	74%
Father having read to the child in the last week at age 5	50%	51%
Vocabulary test at age 5	-0.22	-0.13
Highest parental education	2.59**	2.83**
Comparison 3	Missing some variables at age 10	No Missing at age 10
Educational level at age 30	2.61	2.61
Children's psychological problems at age 10	6.45**	6.95**
Mother's malaise at age 5	3.81	3.91
Mother having read to the child in the last week at age 5	71%	74%
Father having read to the child in the last week at age 5	51%	51%
Vocabulary test at age 5	-0.13	-0.13
Highest parental education level	2.91	2.83
Comparison 4	Missing all variables at age 5	No missing at age 5
Educational level at age 30	2.68	2.60
Children's psychological problems at age 10	21.56	21.80
Family income at age 10	64.38	64.50
Parental supervision at age 10	8.40	9.00
Comparison 5	Missing some variables at age 5	No missing at age 5
Educational level at age 30	2.52	2.60
Children's psychological problems at age 10	22.9	21.80
Family income at age 10	55.8***	64.50***
Parental supervision at age 10	8.96	9.00

Note: For means, independent samples t-test and chi square test for percentages. *p <0.05, **p <0 .01, ***p< 0.001.

498 individuals answered the questions about the variables at 5 and 30 years old, but they did not answer the questions regarding the variables at 10 years old. Of these, 158 did not take part in the survey at 10 years old. I checked whether there are any differences between those providing information on the relevant variables at 10 years old (5905 cases) and those that did not (comparison 2 of Table 2). It turned out that the former group has a higher educational level than the latter (with the parents also having higher educational levels). In addition, those who provided information on the relevant

variables at 10 years old had few psychological problems at age 5 that those who did not provide information on the relevant variables at 10 years old.

Furthermore, there are 859 cases with some missing values in one or two of the three variables at 10 years old (comparison 3), but there are no differences between this group and those with no missing information at 10 years old. The only exception is psychological problems: the first group has fewer psychological problems than the latter.

There are also 736 children with missing values in all the variables at 5 years old, but the other waves contain information about them (comparison 4 of Table 2). However, there are no differences between this group of children and those that have no missing cases in the variables of the 5-year-old wave (6,021 cases).

500 children have missing values in one or more of the variables at 5 years old, but there is information about them in the other waves (comparison 5 of Table 2). However, there are no differences between this group of children and those with information in all the variables of wave 5 (the only exception being household income at 10 years old). In conclusion, there are few differences between those children with missing cases in a given wave and those that do not have missing cases in the same wave.

Table 3: Means and percentages of children from divorce families by groups of missing cases.

	Missing education	No Missing education
Sex	34%***	39%***
Children's psychological problems age 5	58.5	57.99
Mother's malaise at age 5	5.3	4.95
Mother having read to the child in the last week at age 5	66%	68%
Father having read to the child in the last week at age 5	33%	41%
Vocabulary test at age 5	-0.41	-0.36
Highest parental education level	2.4	2.55
Children's psychological problems at age 10	28.12***	24.54***
Family income at age 10	39.41	39.03
Parental supervision at age 10	9.94**	10.86**

Note: For means, independent samples t-test and chi square test for percentages. *p < 0.05, **p <0 .01, *** p< 0.001.

The group of children from divorced families is created using information on their family structure in the first and the second follow-up interview. For this reason, the number of missing cases in the variables of this group is lower than for children from intact families (Table 1). In contrast, the percentage of missing cases of children's educational level which is measured in wave 5 is 28% for children from divorced families. This indicates that children from divorced families tend not to continue to participate in the survey. This is a potential source of bias in my results, because it shows that data are not missing at random (Allison, 2001). In fact, table 3 shows that not including these children in the analysis might be a source of bias. In fact, a comparison between those for whom there is information on their educational level at age 30 and those for whom there is no information shows that the former group has more psychological problems and less parental supervision than the latter.

For this reason, three strategies are used to deal with the missing cases. First, I carry out all analyzes using listwise deletion of missing data. This reduces the sample size by 37 percent. Second, I use multiple imputation estimation, using the PRELIS software. This procedure allows all cases in the analysis (amounting to 7,967) to be included. Third, since I have a high percentage of missing cases in the same variables for the group of children in intact families, I restrict the sample to those that gave information on their family structure in waves 1, 2 and 5. These restrictions reduce the sample size to 5,852 cases as well as the number of missing cases in the intact group. With these sample restrictions, the number of missing cases of the variables measured in the waves 1 and 2 are lower than the percentage of missing cases of the divorce group. I use multiple imputation estimation for imputing missing cases of the restricted sample. Because the results of the three methods for handling missing data are similar, my preferred model is the one with the largest sample size. I therefore present the results that I have obtained using the second strategy.

1.7 Results

1.7.1 Parental divorce: causal or selection effect?

Table 4 shows the descriptive results by family type for: the control variables measured before parental separation when the children were 5 years old; the intervening variables measured after parental separation when the children were 10 years old; and the children's educational level at age 30. It can be seen that children from divorced families have a lower educational level than those from intact families, and these differences are statistically significant. However, according to the selection explanation, it is important to note that differences in educational achievement begin before parental separation, since the vocabulary test score at 5 years old is lower for children that subsequently experiencing parental divorce than for those not experiencing this event. One possible explanation for this finding is that divorced families are already different from intact ones before the parental divorce. In fact, the descriptive results show that before family dissolution, mothers that will divorce have more psychological problems than those from intact families and, that parents who will experience this event are less educated and read less to their child than their counterparts in intact families, but the differences are greater between fathers than between mothers. These results show that the mother's and father's disengagement starts before parental divorce.

Table 4. Means, percentages and standard deviations by family type.

	Divorce families	Intact families	Total	
Sex	45%***(std=1.00)	53%***(std=1.00)	53%	(std=1.00)
Children's psychological problems at age 5	58.16 (std=4.71)	57.81 (std=4.12)	9.02	(std=4.07)
Mother's malaise at age 5	5.04***(std=3.74)	3.99***(std=3.17)	4.04	(std=3.21)
Mother having read to the child at age 5	68%***(std=1.00)	74%***(std=1.00)	73%	(std=5.69)
Father having read to the child at age 5	39%***(std=1.00)	52%***(std=1.00)	50%	(std=5.69)
Vocabulary test at age 5	-0.37***(std=1.32)	-0.13***(std=1.28)	-0.15	(std=1.28)
Highest parental education	2.50***(std=1.00)	2.82***(std=2.46)	2.56	(std=2.46)
Educational level at age 30	2.09***(std=1.00)	2.60***(std=1.00)	2.58	(std=2.89)
Children's psychological problems at age 10	25.70***(std=11.67)	21.97***(std=10.19)	22.17	(std=10.30)
Family income at age 10	38.98***(std=24.19)	64.33***(std=27.34)	62.93	(std=27.74)
Parental supervision at age 10	8.96***(std=1.00)	10.20***(std=1.00)	10.01	(std=1.98)

Note: For means, independent samples t-test and chi square test for percentages. $*p < 0.05$, $**p < 0.01$, $***p < 0.001$.

In contrast to the selection explanation, before parental divorce, both groups of children have similar levels of psychological problems (at age 5) but after this event, children from divorced families have more psychological problems (at age 10) and are less supervised (at age 10) than children from intact families. Table 4 also shows that the divorced families only have around half of the income of intact families. In short, families that divorce are different than intact families before and after this event. However, are differences in children's educational level due to parental divorce or to previous family characteristics?

The results of the structural equation modelling in Table 5 show the impact of several control variables, measured before separation, on parental divorce and on children's educational level. Contrary to the predictions of the socio-economic selection explanation, parental education and parental divorce are not significantly related (b=-0.02). In contrast, according to the selection explanation, mother's malaise (b=0.11, $p < 0.001$) and children's psychological problems (b=0.01, $p < 0.001$) are related to parental divorce. Additionally, the father having read to the child (b=-0.10, $p < 0.01$) is significantly associated with parental divorce, but not the mother having read to the child (b=-0.07). Significant predictors of children's educational level are parental educational level (b=0.38, $p < 0.001$), children's psychological problems (b=-0.03, $p < 0.001$), mother's malaise (b=-0.04, $p < 0.01$) father having read (b=0.17, $p < 0.001$),

vocabulary test at age 5 (b=0.10, p < 0.001), and sex (b=-0.03, p < 0.05). Nevertheless, in order to consider whether control variables capture some of the spurious effect of parental divorce on children's level of education, the control variables must affect both parental divorce and children's level of education. Table 5 shows that only the children's psychological problems, the father having read, the vocabulary test score at age 5 and sex are associated with parental divorce and children's educational level. These results therefore suggest that some selection exists.

Table 5. Unstandardized coefficients from the structural equation models showing links between exogenous variables and parental divorce and children's educational level.

Independent variables at age 5	Dependent variables	
	Model 1	*Model 2*
	Divorce	Educational level
Sex	-0.12***(0.03)	-0.03* (0.01)
Children's psychological problems	0.01***(0.01)	-0.03***(0.01)
Mother's malaise	0.11***(0.01)	-0.04** (0.01)
Mother having read to the child in the last week	-0.07 (0.04)	0.02 (0.02)
Father having read to the child in the last week	-0.10** (0.04)	0.17***(0.02)
Highest parental education level	-0.02 (0.03)	0.38***(0.01)
Vocabulary test	0.05***(0.01)	0.10***(0.01)

Model 1 :Chi-Square = 0.00 d.f. = 28, P-value =1.00, CFI=1, GFI=1, RMSEA= 0.0000. N=7967.
Model 2 :Chi-Square = 0.00 d.f. = 28, P-value =1.00, CFI=1, GFI=1, RMSEA= .0000. N=7967.
Note: Standard Errors in brackets *p < 0.05, **p < 0.01, *** < 0.001 (two-tailed tests).

Model 1 in Table 6 shows that parental divorce has a significant effect (b=-0.18, p < 0.001) on children's level of education, but it is necessary to test whether this effect is spurious. In order to deal with the selection effects, I introduce a range of controls in model 2 that includes most of the family and children's characteristics before the divorce. One of the limitations of my study is that I do not have information on family conflict prior to the divorce. As mentioned above, one of the advantages of the SES technique is that it is possible to take unobserved variables into account, by introducing correlations between the disturbance terms. Let us assume that parental conflict can affect parental divorce and children's educational level. Some control variables that are predictors of these variables may also be affected by parental conflict or other unobserved variables. In that case, the disturbance term of the variable of parental divorce and the disturbance terms of these control variables must be correlated.

Vocabulary test scores at age 5 are related to parental divorce and children's educational level, and the disturbance terms in these variables and parental divorce are correlated.

Table 6. Unstandardized coefficients from the structural equation models showing links between exogenous variables, parental divorce and children's educational level.

Independent variables at age 5	Dependent variables	
	Model 1 Educational level	*Model 2* Educational level
Divorce	-0.18***(0.02)	-0.10***(0.02)
Sex		-0.04** (0.01)
Children's psychological problems		-0.03** (0.01)
Mother's malaise		-0.03** (0.01)
Mother having read to the child in the last week		0.02 (0.02)
Father having read to the child in the last week		0.16***(0.02)
Highest parental education level		0.38***(0.01)
Vocabulary test age 5		0.10***(0.01)

Model 1 :Chi-Square = 0.00 d.f. = 1, P-value =1.00, CFI=1, GFI=1, RMSEA = .0000. N=7967.
Model 2 :Chi-Square = 0.00 d.f. = 21, P-value =1.00, CFI=1, GFI=1, RMSEA = .0000. N=7967.
Note: Correlation between parental divorce and vocabulary test in model 2. The correlation is b =-0.05, p <0.001. Standard Errors in brackets *p < 0.05 **p <0 .01 *** <0 .001 (two-tailed tests)

In model 2, in addition to adding the rest of the control variables, I include a correlation between parental divorce and the vocabulary test score[9] at age 5 (0.05, p <0.001) and the direct effects of these variables on children's educational level. By including these specifications in the model, I am theoretically controlling for unobserved variables, such as parental conflict. The effect of parental divorce decreases from -0.18 to -0.10, a reduction of 40% of the impact, but it remains significant (p <0.001), . Moreover, it is important to note that in this model, there is no correlation between the disturbance terms of parental divorce and children's educational level. This finding indicates that I am controlling for both observed and non-observed effects. The value -0.10 should therefore be the net effect of parental divorce on children's educational level. Nevertheless, it is important to note that the effect of other variables such as parental education (b= 0.38, p < 0.001) is higher than the effect of parental divorce on children's educational level. These results show that parental divorce is not the most critical factor

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[9] Other models were done with other variables that are related to parental divorce and the children's educational level, such as father's reading to the child and children's psychological well-being at age 5. However, I found similar results using these variables as for the vocabulary test score at age 5.

determining educational achievement, but it is a factor that has significant measurable consequences (Sandefur and Wells, 1999).

1.7.2 Which causal mechanisms are relevant?

The main goal of this paper is to analyze whether family income, parental supervision and children's psychological problems after divorce explain part of the effect of parental divorce on children's educational level .structural equation modelling allows us to test to what extent these variables mediate the effect between parental divorce and their educational level. A mediating variable must be affected by parental divorce, and must also have an impact on children's educational level.

Figures 1, 2 and 3. Unstandardized coefficients from the structural equation models showing links between parental divorce, mediating variables and educational level.
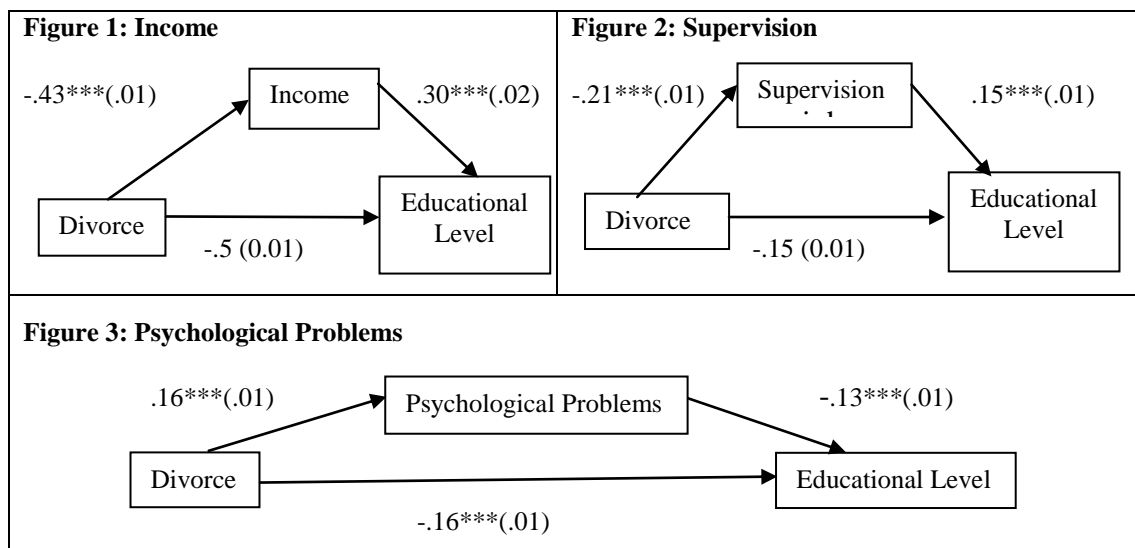
Chi-Square = 0.00 d.f. = 1, P-value =1.00, RMSEA = .0000. N=7967. Mediating variable of model 1 is income at 10 years old. *p < 0.05 **p < 0.01 *** < 0.001 (two-tailed tests)

Figures 1, 2 and 3 show the effect of parental divorce on each individual mediating variable and the direct effect of these variables on children's educational achievement. The other mediating variables and the control variables are not included. A mediating variable has to be affected by parental divorce and at the same time must have an impact on children's educational level. Figure 1 shows that on the one hand, the impact of parental divorce on family income (b=-0.43, p < 0.001) and the impact of family income on children's educational level (b=0.30, p <0.001) are both large and significant. Moreover, when family income is included in the model, the direct effect of parental

divorce on children's educational level decreases from b=-0.18, p < 0.001(see model 1 in Table 6) to b=-0.05 and is no longer significant. In the model without control variables, family income therefore mediates around 70% of the effect of parental divorce on children's educational level.

Figure 2 shows that parental divorce has a strong and negative impact on parental supervision (b=-0.21, p < 0.001) and parental supervision also affects children's educational level (b=-0.15, p < 0.001). Parental supervision therefore mediates around 19% of the effect of parental divorce on children's educational level. Finally, Figure 3 shows that the effect of parental divorce on children's psychological problems is positive and significant (b=0.16, p < 0.001) and these problems also have a significant impact on their educational level (b=-0.13, p < 0.001). Children's psychological problems consequently mediate around 13% of the effect of parental divorce on children's educational level. In sum, models without control variables demonstrate that the most important mediating variable is family income, but parental supervision and children's psychological problems explain a non-negligible part of the effect of parental divorce on educational level. However, these results change when control variables are added to the model.

Table 7. Unstandardized coefficients from the structural equation models showing links between exogenous variables and mediating variables

Independent variables at age 5	Model 1 Income	Model 2 Supervision	Model 3 Psychological problems
Divorce	-0.37***(0.10)	-0.16***(0.02)	0.10* (0.05)
Sex	-0.05 (0.05)	0.27***(0.01)	-0.08** (0.03)
Children's psychological problems	0.03 (0.97)	0.00 (0.01)	0.11 (0.56)
Mother's malaise	-0.01 (0.89)	-0.05***(0.01)	0.25 (0.45)
Mother having read to the child in the last week	-0.02 (0.07)	0.04* (0.02)	-0.04* (0.02)
Father having read to the child in the last week	0.09***(0.03)	0.05***(0.01)	0.00 (0.03)
Highest parental education level	0.45* (0.20)	0.13***(0.01)	-0.05 (0.09)
Vocabulary test at age 5	0.04 (0.38)	0.05***(0.01)	-0.05 (0.16)

Model 1 :Chi-Square = 0.00 d.f. =, P-value =1.00, CFI=1, GFI=1, RMSEA = .0000. N=7967.
Model 2 :Chi-Square = 0.00 d.f. = 21, P-value =1.00, CFI=1, GFI=1, RMSEA = .0000. N=7967.
Model 3 :Chi-Square = 0.00 d.f. = 21, P-value =1.00, CFI=1, GFI=1, RMSEA = .0000. N=7967.
*p < 0.05, **p < 0.001,***p < 0.001 (two-tailed tests)

Table 7 shows the effects of the control variables and parental divorce on the mediating variables. When the control variables are added, the effect of parental divorce on family

income declines from -0.43[10] to -0.37, but is still significant. There is a reduction of 14% in the effect. The parental educational level also has a strong and significant effect on family income (b=0.45, p < 0.05) but as shown in Table 5, the former has no significant effect on parental divorce (b=0.00). These results therefore show that parental divorce and parental educational level have independent effects on family income. Moreover, after the introduction of the control variables, the effect of parental divorce on parental supervision decreases from -0.21 to -0.16, a decline of 22%. However, the coefficient is still negative and significant. It is important to note that parental divorce is one of the most important variables associated with parental supervision, since the impact of other variables such as parental education (b=0.13, p <0.001) and whether the mother reads to the child (b=0.04, p <0.05) and whether the father reads to the child (b=0.05, p <0.001) is not as large. Finally, the coefficient of parental divorce on children's psychological problems is reduced from 0.16 to 0.10 when the control variables are included in the model, but it is still significant and positive. The effect declines by around 38%. In sum, the control variables do not eliminate the negative effect of parental divorce on the mediating variables. But do the mediating variables still have an impact on children's educational level?

Figure 4 shows the links between parental divorce, income, parental supervision, children's psychological problems after divorce and children's educational level, when the control variables and the effects between the mediating variables are included in the model . It shows that although parental divorce has a significant effect on family income (b=-0.37, p < 0.001), the family income does not have a significant impact on children's educational level (b=0.02). Moreover, family income does not have a significant effect on children's psychological problems (b=0.00) and parental supervision (b=-0.13). Family income therefore does not mediate the negative effect of parental divorce on educational level when the control variables are added. In contrast, the effect of parental divorce on children's psychological problems (b=0.07, p <0.001) and the impact of this variable on children's educational level (b=-0.07, p <0.001) are both significant. As a result, children's psychological problems mediate around 5% of the effect of parental

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[10] The effects of parental divorce on the mediating variables without control variables in the model are shown in figure 1 2 and 3.

divorce on children's educational level[11]. Meanwhile, parental supervision also mediates around 15% of this effect, since parental divorce has a significant impact on parental supervision (b=-0.16, p < 0.001) and the latter has an effect on children's educational level (b=0.09, p < 0.001). It can also be seen that parental supervision is not associated with children's psychological problems (b=0.00). Finally, Figure 4 shows that the direct effect of parental divorce is still significant, which means that the mediating variables that I use in this analysis do not explain the entire effect of parental divorce.

Figure 4. Standardized coefficients from the structural equation model, showing links between parental divorce, family income, parental supervision, children's psychological problems after divorce and children's educational level.
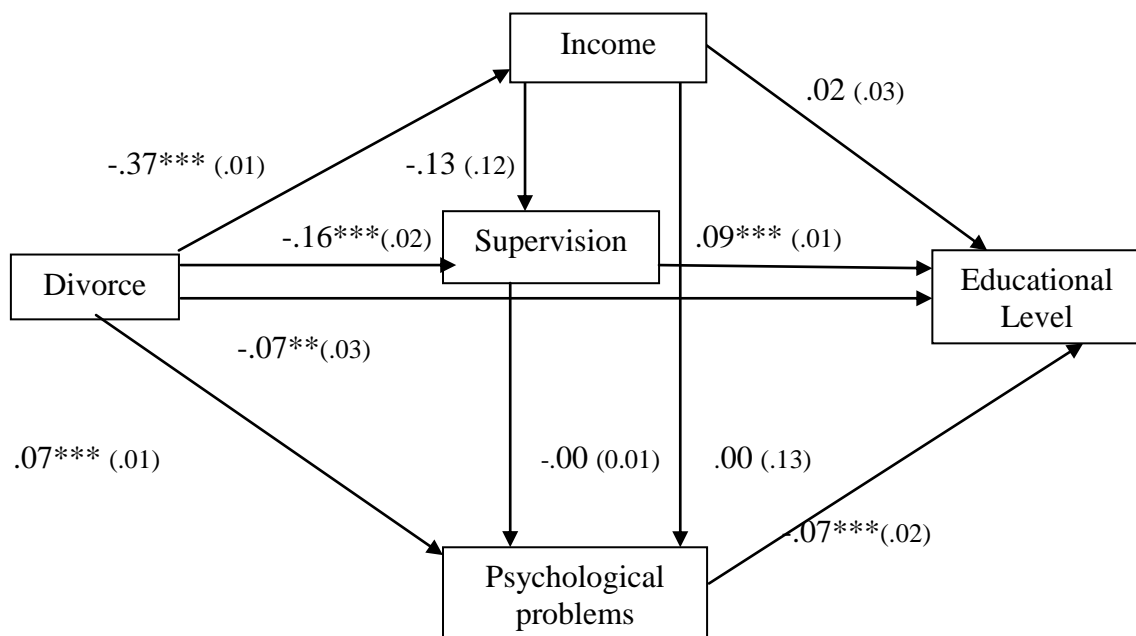
Chi-Square = 10.90 d.f. = 29, P-value =1.00, CFI=1, GFI=1, RMSEA = .0000. N=7967.
Note: Numbers in parentheses are Standard Errors. Controlled by highest parental education, mother having read to the child at age 5 , father having read to the child at age 5, psychological problems at age 5, gender, mother's malaise being at age 5 and vocabulary test at age 5. There is a correlation between vocabulary test and parental divorce.

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[11] When I introduce the effects of family income and parental supervision on children's psychological problems, the effect of parental divorce on children's psychological problems is reduced from 0.10 to 0.07. However, the indirect effects of children's psychological well-being are not significant. For these reasons, I have calculated the part of the effect of parental divorce on children's educational level that is explained by children's psychological problems using the total effect of this variable, which is b=0.10.

1.7.3 Do the effects of the mediating variables differ by family type?

As mentioned above, the previous analyzes are based on 7,531 children whose parents lived together until the cohort members were 21 years old, and 436 children whose parents divorced when they were aged between 5 and 10 years old. Due to the big difference of sample size between the groups, the effect of mediating variables on children's education mainly reflects the effect of children from intact families. In other words, for children that have experienced parental divorce, the effect of the mediating variables on educational level might be different. To test this, a multi-group comparison is run to see whether the effect of mediating variables differs between children from divorced families and those from intact families.

Figure 5 shows the effect of the mediating variables for children of divorced families only, and Figure 6 for children from intact families only. Indirect effects between the mediating variables or control variables are not included in these models. There are significant group differences for income (x^2= 11.17, df=1, p <0.001) and psychological problems (x^2=7.92, df=1, p < 0.01). The impact of income on children's educational level is stronger for children from intact families (b=0.29) than for children from divorced families (b=0.13). In contrast, the effect of children's psychological problems on educational level is lower for children that do not experience parental divorce (b=-0.10) than for children that experience this event (b=-0.23). The path from parental supervision to educational level is comparable for children from intact (b=0.09) and divorced families (b=0.13) (x^2=0.050, df=1). However, do these group differences remain when control variables are included in the model?

Figures 5 and 6. Unstandardized coefficients of the structural equation multi-group model showing links between family income, parental supervision, children's psychological problems and children's educational level for children from divorced and intact families.

Figure 5= Divorce group	Figure 6= Intact group
Income .13***(.05) Educational level	Income .29***(.01) Educational level
Supervision .09* (.05)	Supervision .13*** (.01)
Psychological Problems -.23***(.05)	Psychological Problems -.10***(.01)
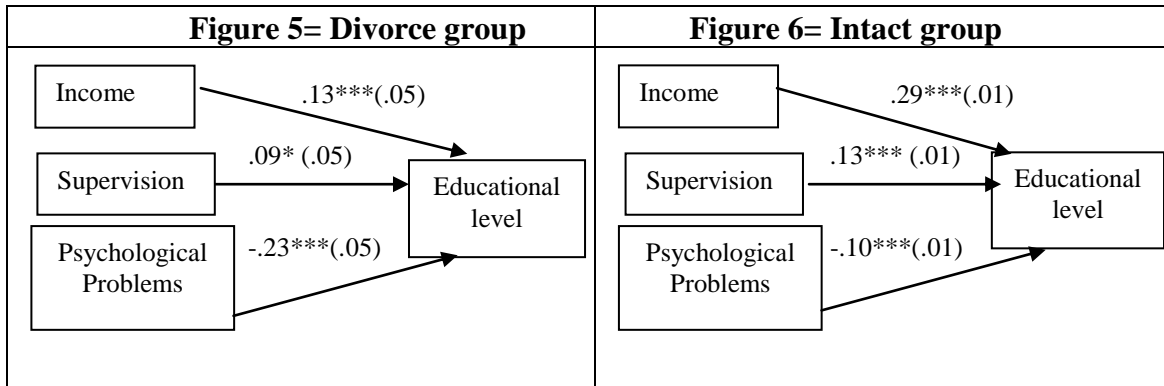
Chi-Square = 0.00 d.f. = 12, P-value =1.00, CFI=1, GFI=1, RMSEA = .0000.
Note: Numbers in parentheses are standard errors and there are several correlations between income, children's psychological problems and supervision.

Figures 7 and 8 show the coefficients of the mediating variables on children's educational level when control variables and indirect effects between the mediating variables are added to the model. Figure 7 shows the effect of the mediating variables only for children of divorce, and Figure 8 highlights the effect for children only from intact families. A comparison of Figure 7 and Figure 8 shows that the impact of children's psychological problems on children's educational level is still higher and significantly different (x^2=6.00, df=1, p< 0.05) for children from divorced families (b=-0.16, p< 0.001) than for children from intact families (b=-0.05 p< 0.05). In contrast, when control variables are included, group differences in the link between family income and children's educational level are not significant (x^2=0.00, df=1). However, this effect is only significant for children from intact families (b=0.04, p<0.01). Further exploration of the data showed that this difference is due to the different sample sizes of these two groups because. I performed a multi-group model where I put the same simple size of intact group (n=7536) in the divorce group (n=7536). I found that for the divorce group, the effect of family income on children's educational level was also significant (b=0.04, p<0.01).

Finally, the path from parental supervision to children's educational level is comparable for the divorce group (b=0.08, p < 0.05) and the intact group (b=0.10, p < 0.001). The inter-group differences in the link between parental supervision and children's educational level are not significant (x^2=0.00, df=1).

Figure 7 and 8. Unstandardized coefficients of the structural equation multi-group model showing links between family income, parental supervision, children's psychological problems and children's educational level for children from divorced and intact families.

Figure 7 =Divorce group	Figure 8= Intact group
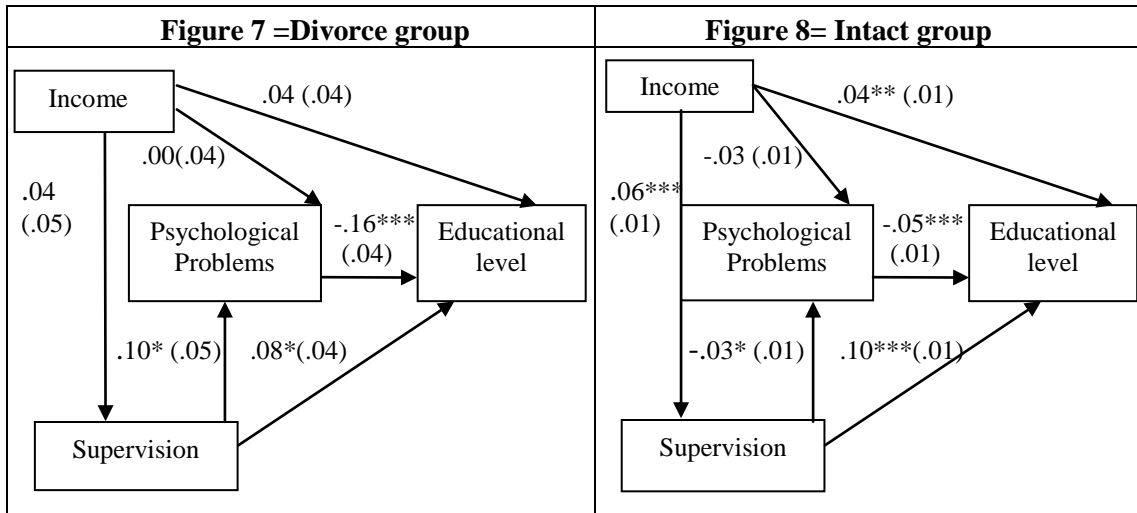
Chi-Square = 19.32 d.f. = 29, P-value =1.00, CFI=1, GFI=1, RMSEA = .0000. N=7967.
Note: Numbers in parentheses are Standard Errors. Controlled by highest parental education, mother having read to the child at age 5 , father having read to the child at age 5, psychological problems at age 5, gender, mother's malaise being at age 5 and vocabulary test at age 5.

There are also some indirect effects among the intervening variables. Parental supervision has a significant impact on children's psychological problems in both groups. For the intact group, the effect is negative (b=-0.03, p<0.05) which means that when children are less supervised, they have more psychological problems. In contrast, for the divorce group the sign of the effect is positive (b=0.10, p<0.05), which indicates that for children from divorced families, more supervision is related to more psychological problems. This finding is unexpected, because as noted above, parental supervision is positively related with children's educational level in both groups. Moreover, no group differences appear in the link between family income and parental supervision. Although Figures 7 and 8 show that this parameter is significant only in the intact group (b=0.06, p< 0.001), this is also significant in the divorce group when the sample size of the divorce group is increased (b=0.04, p< 0.001). Furthermore, the effect of family's income on children's psychological problems is not significant in either group.

1.7.4   Do the effects of parental divorce differ by income level?

In short, previous models have shown that when control variables are included in the model, family income (after divorce at age 10 of child) is not the most important predictor of educational level for children from divorced families, and it is also not a significant mediating factor of the effect of parental divorce on children's educational level. This finding is contrary to the previous literature (McLanahan, 1985; McLanahan and Sandefur, 1994; Thomson Hanson and McLanahan, 1994). In order to be sure about the importance of family income for the children of divorce, I therefore develop another research strategy. I run a multi-group analysis with three income groups[12]. I test whether the effect of parental divorce varies by income level. I hypothesized that if family income plays a relevant role after divorce, I should find that in the highest income group, parental divorce does not have a significant effect or that this effect is lower than in the other income groups.

Table 8: Unstandardized coefficients of parental divorce on children's level of education by income groups in a multi-group analysis.

	Effect	Standard Error
High income group	-0.14***	0.02
Mid-income group	-0.11***	0.02
Low income group	-0.09**	0.02

Chi-Square = 0.00 d.f. = 36, P-value =1.00, CFI=1, GFI=1, RMSEA = .0000.
Note: controlled by highest parental education, mother having read to the child at age 5 , father having read to the child at age 5, children's psychological problems at age 5, gender, mother's malaise being at age 5 and vocabulary test at age 5.

Table 8 shows the effect of parental divorce on children's educational level in the three income groups, when control variables are added to the model. Contrary to what was expected, the effect of parental divorce on children's educational level is lower in the

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[12] In order to create the income groups, I used the option Replace Missing Values: Method Linear Trend at point of the SPSS 17. Then I asked the program to give two cut-off points in order to create groups of income with similar number of cases. The cut-off point values are 55.67 and 62.58. Due to the fact that many cases that have these values, it is impossible to create income groups with the exact number of cases. Since the main aim of this study is to compare the effect of parental divorce between children with low and high income levels, I decided to have a smaller amount of cases in these groups. There are therefore 2,145 cases in the first income group, which ranges from 6.01 to 55.18; 3,777 cases in the second income group, ranging from 55.67 to 62.58; and 2,145 cases in the third income group, which ranges from 65.95 to 194.10. I also performed the same analysis without imputing the income variable and the results are similar.

low income group than the high or middle income groups. There are also significant group differences between the high and the low income categories (x^2= 4.72, df=1, p < 0.05). In other words, the effect of parental divorce is significantly lower in the low income group than in the high income group. There are no significant group differences between the middle and low income brackets (x^2= 0.80, df=1) and between the high and middle income groups (x^2= 2.15, df=1).

1.8   Conclusions

The results reported here show that children and parents from intact families and divorced families are different in several domains before parental separation. Even if some selection effect exists, like previous studies I showed that parental divorce has a significant effect on children's educational level. I wondered which variables could mediate the negative impact of parental divorce on children's educational level. I found that parental divorce has a negative impact on children's psychological problems, parental supervision, and family income in the models with and without the control variables. Moreover, in the models without the control variables, family income is the most important mediating variable, but parental supervision and children's psychological problems also mediate a substantial part of this effect. In contrast, in the models with control variables, family income is no longer a mediating variable but parental supervision and children's psychological problems continue to mediate some part of this effect.

I also tested whether the impact of mediating variables on children's educational level differs by family type. I found that the effect of parental supervision on children's educational level is comparable for children from intact and divorced families. However, the effect of family income on the intact group is higher than on the divorce group when control variables are not included in the model. In contrast, in the model with control variables, there are no group differences in the effect of family income on children's educational level.

One of the most important findings in this study is that I found that there are significant group differences for psychological problems. The effect of children's psychological problems on their educational level is higher for children from divorced families than

for children in intact ones. In other words, in the former group, having psychological problems at age 10 leads to more long term consequences than for the latter group.

Moreover, the effect of parental divorce on children's educational level is the same in the three income groups. Put differently, parental divorce has similar effects in relation to educational attainment on those children that have high levels of economic resources after divorce as those that have low levels.

Finally, the findings of this study suggest that policymakers, as well as improving family income levels of children from divorced families, should pay more attention to their psychological problems after divorce. Some of the limitations of this study are the lack of a continuous measure of family income and information on parental conflict. Further research should give greater prominence to studying the long term effects of children's psychological problems after divorce, and resolve the limitations of this paper.

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Chapter 2

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Has the Impact of Parental Divorce on Young Adults' Psychological Problems Changed over Time? Empirical Evidence for Sweden 1968-2000[13]

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2.1 Introduction

During the twentieth century, divorce rates increased substantially in most societies in the Western world. Today, it is well demonstrated that parental divorce is associated with several negative outcomes in children (Amato, 2000; Amato and Keith, 1991a, 1991b; Sigle-Rushton and McLanahan, 2004) and there is some evidence that the effect of family structure is causal (Cherlin, Chase-Lansdale and McRae, 1998; Ermisch and Francesconi, 2001; Gruber, 2004; Painter and Levine, 2000). However, during the last two decades, in both the literature and in public debate, another relevant question has emerged: whether the impact of parental divorce on children has decreased over time, as it has become more common and society has become more adapted to it. In other words, was parental divorce a different experience when it was a relatively unique event, compared to today, when the experience is shared with numerous peers? Studies show that people's attitudes towards divorce are less negative than they used to be (Thornton and Young-De Marco, 2001) and parental divorce nowadays means something different to children than it used to. In Sweden, an ever-increasing proportion of children remain in frequent contact with the non-custodial parent following family dissolution and even share residence with both parents, something that was uncommon just a couple of decades ago (Statistics Sweden, 1995, 2003, 2007). As a result, outsiders may today no longer view divorce in the same way as they used to, and the event might no longer imply what it once did to those directly involved. Despite these changes, there have been few studies on whether the effect of parental divorce on children's outcomes varies across cohorts. The main reason is that these studies make heavy demands on data. Ideally, data should cover a long time period, maintain identical measures over time, and be based on identical sampling procedures, but data of this type are rare (Amato, 2001). Here we use a Swedish data set that meets these criteria, i.e. the Swedish Level of Living Survey, which covers the period 1968-2000 and includes identical data on family type during childhood and the outcome considered here, i.e. psychological problems, over surveys. With these data, we are therefore able to compare the psychological well-being of young adults (19-34 years) from intact and dissolved families, and cohorts (1934-1949 and 1966-1981) who mainly grew up before and after the large increase in divorce rates that took place in the 1970s.

Sweden is also an interesting case for other reasons. Most previous research on the effects of parental divorce on adult children's psychological well-being has been conducted in Anglo-American countries, and little is still known about other countries with high divorce levels,

such as Sweden. As stated by Popenoe (1987), the family structure in this country has moved farther from the ideal-typical nuclear family than in any other industrial society. Between the middle of the last century and the beginning of the present, Sweden experienced major changes in the dimensions that define the divorce context. The Swedish annual divorce rate per 1,000 marriages increased from 5 in the early 1960s to 13 in 2006 (Statistics Sweden, 2007b). Sweden is also the country where cohabitation is most common, and it is well-known that this type of union is more fragile than marriage (Kiernan, 2002). In 1974, Sweden was one of the first countries in the world to adopt a unilateral, no-fault divorce law without separation requirement, and in recent decades Sweden has gradually implemented one of the most generous family policies in the world (Carlson, 2005). Furthermore, Swedish society has witnessed a substantial deterioration in young individuals' psychological well-being in recent decades (see Ministry of Education and Culture, 2006; Ministry of Health and Social Affairs, 2001; National Board of Health and Welfare, 2005). As a consequence, an issue that is related to our main question, i.e. if the impact of parental divorce on young adult's psychological well-being has changed over time, then becomes apparent: to what extent is the decreasing psychological well-being among young adults in Sweden linked to the increasing experience of growing up in a dissolved family? These are issues that will be dealt with in this paper.

2.1.1 Individual pathways of the effect of parental divorce and children's psychological well-being

Research shows that children experiencing parental divorce generally present lower levels of psychological well-being than children from intact families (Amato and Keith, 1991b; Seltzer, 1994) even into adulthood (Chase-Lansdale, Cherlin and Kiernan, 1995; Cherlin, Chase-Lansdale and McRae, 1998; Booth and Amato, 2001; Amato and Sobolewski, 2001; Furstenberg and Kiernan, 2001; Sigle-Rushton, Hobcraft and Kiernan, 2005).

Several theories try to explain the negative association between parental divorce and adult children's psychological well-being. A distinction can be made between causal and selection theories, and theories that focus on childhood or on adulthood. Selection theory suggests that the association between parental divorce and psychological problems in offspring is in fact spurious. The literature has emphasized three main selection explanations: socio-economic selection, conflict selection and genetic selection. Each claims that family characteristics before marital break-up are responsible both for children's well-being and parents' divorce.

However, most studies that have controlled for prior family income and parent's education report that parental separation is still associated with a number of negative outcomes in children after controls for these conditions (Jonsson and Gähler, 1997; McLanahan and Sandefur, 1994; Pong and Ju, 2000). Other studies show that parental conflict prior to separation is partly, but not fully, responsible for the association between parental divorce and children's psychological well-being (Hanson, 1999; Jekielek, 1998). Moreover, studies find that the association between parental divorce and child problems is similar for adopted and biological children, indicating that the link between parental divorce and offspring psychological adjustment is not caused by genetic factors in children (Amato and Cheadle, 2008; Brodzinsky, Hitt and Smith, 1993; O'Connor et al., 2000).

Furthermore, Cherlin et al., (1991) find that the effect of parental divorce on children's behaviour problems disappears when considering behaviour problems and family difficulties that were present before parental divorce. However, other longitudinal studies show that parental divorce has a negative effect on children's psychological well-being (Hanson, 1999; Jekielek, 1998; Kiernan and Mensah, 2010; Morrison and Coiro, 1999; Sigle-Rushton, Hobcraft and Kiernan, 2005; Strohschein, 2005). Moreover, Cherlin, Chase-Lansdale and McRae (1998) find that children with divorced parents exhibit poorer psychological adjustment than children with continuously married parents even before marital dissolution, but the gap in the adjustment between these two groups of children continued to grow throughout adolescence and early adulthood, suggesting that parental divorce has a cumulative impact, i.e. one that is causal, and which cannot be accounted for by pre-divorce factors.

Meanwhile, trauma theories claim that parental divorce per se has an effect on children's psychological well-being. It is argued that children experience feelings of loss and abandonment after parental divorce, and that this explains the decline in children's emotional well-being (Pryor and Rodgers, 2001). According to attachment theory (Bowlby, 1973; 1980) children need a secure relationship with their adult caregivers for a sound psychological development to evolve. A parental divorce is related to children's insecure attachment to their parents (Waters et al., 2000), and this might explain the higher level of psychological problems in this group (Pryor and Rodgers, 2001).

As a consequence of divorce, children also experience other stressful conditions during childhood. First, it is well-documented that there is a decline in children's standard of living following separation (Amato, 2000; Del Boca, 2003), including in Sweden (Gähler, 2001), and poor economic conditions during childhood increase the risk of psychological problems in children (Kiernan and Huerta, 2008; Kiernan and Mensah, 2009) and adults (Chase-Lansdale, Cherlin and Kiernan, 1995; Sobolewski and Amato, 2007).

Secondly, divorce is also a difficult experience for adults and affects their psychological well-being negatively (Gähler, 2006; Johnson and Wu, 2002), and the quality of parenting of both the custodial and the non-custodial parent deteriorates (McLanahan and Sandefur, 1994; Amato and Gilbreth, 1999). It is well-known that children who have parents with psychological distress and poor parenting skills present higher risks of psychological problems than other children (Abela et al., 2009; Kiernan and Huerta, 2008).

Thirdly, divorce is related to several changes in family relations. Parental conflict can increase or continue after parental divorce, and post-divorce parental conflict has negative effects on children's well-being (Kelly and Emery, 2003). Children of divorce also sometimes experience remarriage of their parents, and stepparents represent a new source of stress for many children (Hetherington, 1998). Several studies suggest that even if remarriage provides a unique opportunity to restore the household income back to pre-divorce standards, the risk of maladjustment in stepfamilies and single mother families is roughly the same (Coleman, Ganong and Fine, 2000).

Following a life-course perspective (Caspi and Elder, 1988; Elder, 1994), Amato and Sobolewski (2001) note that experiences during adulthood can increase or reduce difficulties that started in the family of origin. Several conditions in adulthood, such as socioeconomic attainment, marital and relationship stability, and the quality of relations with parents, mediate the association between parental divorce and offspring psychological well-being (Amato and Sobolewski, 2001; McLeod, 1991; Ross and Mirowsky, 1999). Divorce affects children's educational attainment (Frisco, Muller and Frank, 2007; Jonsson and Gähler, 1997) and occupational success (Biblarz and Raftery, 1999) negatively, and income and education are both positively associated with psychological well-being (Ross and Mirowsky, 1999).

Furthermore, research shows those adult children's psychological well-being benefits from close parent-child relations (Umberson, 1992). However, adult children from divorced families have fewer contacts with their parents compared with their peers from intact families, and the quality and closeness of their relationship are lower (Sobolewski and Amato, 2007; Tomassini et al., 2004). In addition, children of divorce are themselves more likely to divorce (Dronkers and Härkönen, 2008; Gähler, Hong and Bernhardt, 2009) and it is well-known that married people report higher psychological well-being than divorced or single people (Lorenz et al., 1997; Waite, 1995).

2.1.2 Pathways of the declining hypothesis

There are several reasons to assume that the negative effects of divorce should decline when divorce is a more commonplace phenomenon and when society is more adapted to this new social change. First, as the increase of divorce rates has meant that alternative family structures have become more widely accepted, divorce has been accompanied by less stigma, and the degree of community disapproval should lessen (Sigle-Rushton, Hobcraft and Kiernan, 2005). As stigma decreases, the negative effect of parental divorce on children's well-being should also be reduced.

Second, a number of family and social policy programs have contributed to reduce income dispersion between family types in Sweden in recent decades (Gähler, 2001). Although these differences have by no means been eliminated, single mothers in Sweden are still better off economically than their peers in other countries (Bradbury and Jäntti, 1999). In Sweden in particular, the effect of parental divorce on children's well-being should therefore have declined over time.

Third, recent empirical research suggests that as divorce becomes prevalent, the nature of marital dissolution changes. de Graaf and Kalmijn (2006) show that when parental divorce is rare, severe divorce motives (e.g. violence and infidelity) are more frequent, but when this event is more common, and less select, relational and psychological motives are the norm. One possible explanation for this change is that when divorce is a commonplace phenomenon, no-fault divorce law might be easily adopted. Under these conditions, couples can obtain a divorce with no need to demonstrate the complete breakdown of their marriages (Wolfinger, 1999). When social and economic barriers to divorce are low, even couples that have not

experienced severe conflict might decide to divorce. As a result, if we consider that it is parental conflict and not divorce per se which affects children's psychological well-being, and if parental conflict declines when divorce becomes more prevalent, it could therefore be argued that the association between parental divorce and children's psychological well-being should also be reduced over time.

Fourth, over time parents may have become more aware of children's needs and how family dissolution affects children. Today's parents might therefore be better able to help their children alleviate any effect of parental divorce (Sigle-Rushton, Hobcraft and Kiernan, 2005).

The arguments above all imply a decrease in the effect of parental divorce when it is more prevalent. However, we also find some arguments against the declining hypothesis in the literature. One points to the evolution of the social composition of divorce. Goode (1962, 1970, 1993) suggests that the relationship between class and marital instability depends on the extent to which divorce has become easily acquired and widespread. When social and economic barriers to divorce are high, and divorce is rare, then this event is more common in higher social strata. However, as these barriers fall, marital instability becomes more frequent among lower classes. Indeed, several empirical studies corroborate Goode's theory (Chan and Halpin, 2005; Härkönen and Dronkers, 2006). Following this line of reasoning, and given that financial hardship is detrimental for children, parental divorce in general should have more negative effects on children's psychological well-being when divorce is a common phenomenon.

Amato (2001) makes another argument against the declining hypothesis that is linked to family conflict prior to divorce. As noted above, parents split up with lower levels of conflict in societies with higher divorce rates. The literature has demonstrated that divorce can benefit children that live in high-conflict marriages, because it takes them away from an aversive and stressful home environment (Amato, Loomis and Booth, 1995; Booth and Amato, 2001). In contrast, however, the dissolution of low-conflict marriages appears to have negative effects on offspring's lives because it represents an unexpected and unwelcome event, which children are likely to experience as stressful (Amato, Loomis and Booth, 1995). Divorce under these circumstances represents a major change in what may otherwise have been a secure and (from a child's perspective) seemingly well-functioning family (Booth and Amato, 2001). If divorce is more harmful for these children, and this type of divorce has become more common, we

would therefore not expect the negative effect of parental divorce to have decreased across generations.

2.1.3 Empirical studies on change over time

In spite of these theoretical arguments, empirical studies on change over time are few. We will therefore also consider studies that focus on outcomes other than psychological well-being. Studies on change over time use three different strategies. One strategy is to compare results from studies conducted during different decades. Amato and Keith's (1991b) comprehensive meta-analysis of studies conducted between the 1950s and 1980s show that the effect size of divorce on children is smaller for various outcomes for more recent studies (although not for psychological adjustment). Consequently, they predicted that the effect size of parental divorce should continue to decrease in the next decade. However, when replicating the meta-analysis, including studies published in the 1990s, Amato (2001) generally finds that the effect size of parental divorce tended to be weakest in the 1980s and increased again in the 1990s. In fact, the deterioration during the 1990s is particularly strong for psychological adjustment. Amato speculates that the general trend may be due to an increasing income gap between family types and/or an increase in low-discord marriages ending in divorce and that this is in turn especially distressing to children. In another meta-analysis, Reifman et al., (2001) reach a similar conclusion, i.e. that the effect of parental divorce on psychological adjustment is stronger in the 1990s than in previous decades. For adult children, however, Amato and Keith (1991a) find that the effect of parental divorce on psychological well-being is less negative in the 1980s compared to previous decades. A weakness with this strategy, of course, is that studies included in the meta-analyses involve a variety of measures and research designs, thus making direct comparisons difficult.

A second strategy, therefore, is to compare the effect of parental divorce across generations, using identical measures over time. Here again we find different results depending on the type of outcome studied. Biblarz and Raftery (1999) show that the effect of family structure on children's educational and occupational success has been constant over the last 30 years in the U.S. Ely et al., (1999) compare the effect of parental divorce on children's educational attainment in three British cohorts (1946, 1958, and 1970), and also find that the effect of family breakdown on children has not attenuated with the increasing prevalence of divorce. Sigle-Rushton, Hobcraft and Kiernan (2005), comparing British cohorts born 1958 and 1970,

show that the association between parental divorce and children's educational attainment, and socioeconomic and psychological well-being, has not decreased across generations. Wolfinger (1999), on the other hand, shows that the positive relationship between parental divorce and own divorce has attenuated over time, a conclusion that is contradicted by Li and Wu (2008).

We also find mixed evidence using a third strategy, i.e. comparing countries with different divorce rates, divorce laws, family policies, and social attitudes towards divorce. Kalmijn (2008) finds that the negative effect of parental divorce on father-child contact is higher in Southern countries (with low divorce rates) than in Nordic countries (with high divorce rates). Engelhardt, Trappe and Dronkers, (2002) show that the intergenerational transmission of divorce is stronger in West Germany, characterized by relatively low divorce rates and traditional divorce laws and family policies, than in East Germany. Accordingly, in a meta-analysis of European studies on divorce, Wagner and Weiß (2006) find a negative association between the proportion of children from divorced families in a country and the intergenerational transmission of divorce. However, Daatland (2007) shows that the negative effects of divorce on parent child-contacts are similar in Norwegian rural and urban areas, and Ely et al., (2000) find that the effect of parental divorce on children's psychological well-being, educational attainment, life styles, and health is not more detrimental in Scotland (with low divorce rates) than in England (with high divorce rates). Finally, Tomassini et al., (2004) show that the effects of parental divorce on mother-child and father-child contacts are not stronger in countries where divorce is an infrequent phenomenon, such as Italy, than in countries where marital break-up is more common, e.g. Finland, Great Britain, and the Netherlands.

Based on these findings, no clear conclusion about "the declining hypothesis" is evident. The empirical evidence is mixed and mostly based on Anglo-American data. For these reasons, more research on the development of the effect of parental divorce on child well-being, from countries other than those in the Anglo-Saxon world, is needed.

2.2   Data and analytical strategy

Our analyses are based on cross-sectional data from two waves of the Swedish Level of Living Survey (LNU), collected in 1968 and 2000 (the LNU was also carried out in 1974, 1981, and 1991). In all years, a 0.1 percent random sample of the Swedish adult population aged 18–75 years (15-75 years in 1968, 1974, and 1981) was interviewed face-to-face about their living conditions in general, including childhood conditions, family situation, education, health, and economic resources. The LNU is an initiative of the Swedish Institute for Social Research, Stockholm University, and the fieldwork was carried out by Statistics Sweden. The response rate was 90.8 percent in 1968 and 76.6 percent in 2000 (see Jonsson and Mills, 2001; and www.sofi.su.se for more thorough descriptions of the data set). An essential trait of these data is that they contain identical measures over time for family type in childhood, psychological well-being, and different control variables.

In this paper, we want to analyze how the association between parental divorce and adult psychological well-being has developed over time. To achieve this, our analytical strategy is to compare individuals of the same age experiencing parental divorce during different time periods. The data contain information on whether the respondent has experienced parental divorce up to age 16, but whereas the LNU 2000 contains information on the respondent's exact age for this event, this information is not available for previous waves. To distinguish two non-overlapping time periods during which the parental divorce did occur, we have included respondents aged 19-34 in 1968 and 2000 respectively. The analyses for 1968 are therefore based on respondents born in 1934-1949 (1,633 observations), who, if at all, experienced parental divorce during the period 1934-1965, and the analyses for 2000 are based on cohorts born 1966-1981 (1,460 observations) who experienced parental divorce during the period 1966-1997.

To check the robustness of our results, we have also conducted a number of alternative analyses. In one such analysis, we selected the cohorts born 1974-1981 (aged 19-26 in 2000) who experienced parental divorce during the period 1974-1997, i.e. following the introduction of no-fault divorce in 1974, and compared them with cohorts born 1942-1949 (aged 19-26 in 1968) whose parents divorced during the period 1942-1965. Results from this analysis yield no results other than those presented here.

We have also taken the birth cohort as our point of departure, rather than the year of parental divorce. Due to the panel structure of the data, i.e. respondents remain in the sample between surveys, most individuals have taken part in more than one survey. To achieve independence between observations, i.e. to only let each respondent contribute to estimations on one occasion, we have included 19-50 year olds in the 1968 and 2000 surveys (born in 1918-1949 and 1950-1981 respectively) and 19-31 year olds in the 1968, 1981, and 2000 surveys (born in 1937-1949, 1950-1962, and 1969-1981 respectively). The advantage of the first of these two analyses is that it includes a larger number of cases whereas the latter includes three measuring points. However, the results of these analyses do not differ substantially from those presented here, and a disadvantage is that these analyses do not refer to a point in time for parental divorce, which should clearly be the focus here. Moreover, another disadvantage of the first analysis is that we want to focus on young adults because as noted above, one of our research questions is whether the general deterioration of psychological well-being among young adults in Sweden is due to the increase in parental separation.

2.3   Variables

2.3.1   The dependent variable

The main dependent variable used here is *psychological problems*. Information on six different indicators was used, based on the question "Have you had any of the following illnesses or ailments in the last 12 months?" The indicators are "general tiredness", "insomnia", "nervous trouble", "overexertion", "depression", and "mental illness". These indicators are based on the respondent's own perception of psychological problems. Three answer categories were given for all indicators: "no problems", "mild problems", and "severe problems". We dichotomized all the indicators into 0 (no problem) and 1 (problem/s)). We also constructed a summarizing variable, based on all six indicators, again dichotomized into 0 (no problem) and 1 (problem/s). The internal consistency among the six items of the variable is very good (Cronbach's alpha=0.84). We apply binary logistic regression for the empirical multivariate analyses. The current procedure is chosen for reasons of simplicity and clarity. Obviously, the dependent variables could have been constructed in a number of other ways. To analyze to what extent our results were sensitive to procedure, we tested a number of other model specifications, using different cut-off points for the dependent variables and other regression techniques (multinomial logit regression for categorized variables and OLS

regression for metric variables). The results from these analyses are almost identical to those presented here, and we therefore decided to use a dichotomized measure, which is easily interpretable.

Moreover, it is important to note that respondents with serious psychological problems may refuse to answer questions and/or take part in the survey to a lesser extent. It was impossible for us to estimate the magnitude of the latter (potential) problem. However, the internal non-response rate of the six indicators of psychological problems is very small, at less than 0.3 per cent in both survey years. Moreover, we have no reason to believe that willingness among individuals with serious psychological problems to take part in the survey differs by family type of origin, or that it has changed over time. We do not therefore believe that our results are biased in this regard.

2.3.2 The independent variable

The independent variable here is *family type in childhood*. This variable is based on the answer to the question "Did you live with both your biological parents during your entire childhood (up to 16 years of age)?" Only respondents answering this question in the affirmative and those answering "no, because of parental separation or divorce" were included in the following analyses. The former group grew up in an intact family, whereas the latter were born into a family with both biological parents but subsequently experienced a parental divorce (between formally married parents) or separation (between cohabiting parents) during their upbringing. Those who did not grow up with both their biological parents for other reasons (mostly parental death or being born to a single parent) were omitted.

2.3.3 Control variables

In a first model, we also control for four conditions that arguably appear before parental divorce in time: *Gender* (man/woman), *Respondent's age* (metric variable), *Country of origin* (respondents born in Sweden versus respondents born in another country) and *Parents' education*. This variable is defined as the higher of the two parents' educational levels (if different) and contains four categories: 1) Primary school, 2) Vocational school, 3) Lower secondary school and 4) Upper secondary school or higher.

In a second model, we control for a number of conditions whose temporal association to family type in childhood is not as clear-cut. These variables can precede divorce, follow it, or both. First, we control for *Family dissension* in the childhood family. This variable is based on the question "Was there any serious dissension or friction in your family while you were growing up?" The answers were categorized into "yes", "uncertain", and "no". The first two categories were merged (and contrasted with those answering "no") because we believe that "uncertain" indicates that serious dissension may have occurred, even if the respondent is not willing to give the definite answer "yes". However, we also tested to exclude respondents answering "uncertain" from the analyses but the results were only marginally affected. Unfortunately, we do not know if children refer to family dissension before, during and/or after parental divorce. Moreover, for the 1968 survey we do not know between which family members dissension occurred. It is likely, however, that most respondents refer to inter-parental dissension. In the 2000 survey, the respondents were asked between whom dissension occurred, and almost eighty percent of the respondents with divorced and separated parents claim that it occurred between their biological parents.

The variable *Economic hardship during upbringing* corresponds to the answer (no/yes) to the question "Did your family experience economic hardship while you were growing up?" It should be noted that for those who grew up in disrupted families, it is not known whether these economic problems occurred as a consequence of the divorce or separation, or whether they were already apparent before this event, i.e. whether or not there is a selection effect. However, previous studies (considering the situation during the 1980s and 1990s), indicate that the lower economic well-being among divorced and separated parents in Sweden could only be accounted for by such an effect to a very limited extent (Gähler, 1997; Jonsson and Gähler 1997). Moreover, we consider that this variable is not just a reflection of material or objective living conditions (see Hayo and Seifert, 2003). However, Conger et al., (1999) demonstrate that both economic resources and perceived economic stress during childhood are important in predicting children's development.

Previous studies (see above) have shown that children in divorced families have lower achievement levels at school than children from intact families, and that they themselves divorce and separate more often. Class position and education are positively related to psychological well-being and divorced and single people in Sweden have a lower degree of psychological well-being than those who are married or cohabiting (Gähler, 2006). Parental

divorce or separation may therefore affect psychological well-being in adulthood, and children's educational attainment and civil status may mediate this effect. If this is the case, the negative effect of these events should diminish or decrease once the respondent's own attainment and civil status are controlled for. Hence we control for *Respondent's years of education* (metric variable) and *Respondent's civil status*, i.e. single versus married or cohabiting. In deepened analyses, we tested whether single respondents who have experienced a separation themselves differ in psychological well-being from those who do not have this experience, and whether cohabiting and married respondents differ in psychological well-being. Since we found no such differences, we only distinguish between single and married/cohabiting respondents. It should be noted that a causal model is assumed, in which family situation during childhood affects the individual's present educational level and civil status which, in turn, influence psychological well-being at the time of the interview. The causal relationship may be more complex, however. Family type in childhood may have affected psychological well-being earlier, which, in turn, affects the individual's attainment and civil status. If this is the case, it means that when these conditions are controlled for, the effect of childhood family type is to some degree underestimated and the effect of these present conditions on the respondent's current psychological health is overestimated. We do not regard this as being a major problem as we are not primarily interested in the association between family type during childhood and psychological problems per se, but rather in whether the strength of this association has changed over time.

2.4   Results

Descriptive statistics of the variables are shown in Table 1. From these data, it is clear that the experience of parental divorce/separation has increased largely during the period. Of all respondents who have experienced either growing up with both biological parents or seen their parents divorce, i.e. not the entire population, the latter experience was four times more likely for 19-34 year old respondents in 2000 (21 percent) than in 1968 (5.3 percent). Moreover, as in previous Swedish studies (Ministry of Education and Culture, 2006; Ministry of Health and Social Affairs, 2001; National Board of Health and Welfare, 2005), we note that the share of young individuals reporting psychological problems has increased substantially over time. In the 1968 sample, slightly more than a quarter reported psychological problems (as we define them). This share had increased to 45 percent in the

2000 sample. Our main task, however, is to analyze whether the association between family type in childhood and psychological problems in adulthood has changed over time. It appears that the deterioration of psychological well-being is general, i.e. independent of family type of origin, although the relative deterioration actually seems to have been larger for respondents from intact families.

Table 1. Descriptive Statistics (percentages and means)

| | *Survey Year (Year for Parental Divorce)* | | | | | |
| | *1968* *(Parental Divorce 1934-1965)* | | | *2000* *(Parental Divorce 1966-1997)* | | |
Variable	All	Intact Family	Divorced Parents	All	Intact Family	Divorced Parents
Woman (ref. cat.: man)	49.2	49.7	41.4	47.1	47.0	47.7
Age in years (mean)	25.7	25.7	25.4	26.7	26.8	26.1
Born abroad (ref. cat.: born in Sweden)	3.5	3.2	8.0	11.0	11.9	7.8
Parents' education (dominant)						
Primary school (ref. cat.)	69.3	70.0	56.3	22.0	22.2	21.2
Vocational school	9.5	9.2	13.8	18.5	17.9	20.6
Lower secondary school	11.4	11.2	14.9	12.0	12.3	10.8
Upper secondary school or higher	9.8	9.6	14.9	47.5	47.6	47.4
Family dissension (ref. cat.: no)	11.0	8.3	59.8	17.4	10.7	42.5
Economic hardship during upbringing (ref. cat.: no)	14.4	13.4	31.0	11.2	7.7	24.2
Years of education (mean)	9.7	9.7	9.5	13.2	13.3	12.8
Married/cohabiting	56.4	56.3	57.5	51.7	52.7	48.0
Any psychological problem (six-item variable) (ref. cat.: no)	27.5	26.8	40.2	45.1	43.2	52.3
General tiredness (ref. cat.: no)	18.0	17.9	20.7	33.2	32.3	36.3
Insomnia (ref. cat.: no)	5.5	5.4	5.7	16.0	15.1	19.6
Nervous trouble (ref. cat.: no)	14.3	13.8	21.8	13.7	12.0	20.3
Overexertion (ref. cat.: no)	4.2	3.8	11.5	13.2	12.0	17.6
Depression (ref. cat.: no)	4.5	4.2	10.3	10.3	8.7	16.7
Mental Illness (ref. cat.: no)	1.2	1.0	4.6	1.1	1.0	1.3
Share of cross-section	100.0	94.7	5.3	100.0	79.0	21.0
N	*1,633*			*1,460*		

In Table 2, we present results from a multivariate analysis using binary logistic regression. The results are presented as odds ratios, and the estimates refer to the *risk* of having reduced psychological well-being for each category (for categorical variables) compared to a reference category. The risk of the reference category is set at 1. We start by analyzing the risk of reporting *any* psychological problem during the last 12 months. For this purpose we use the six-item variable, based on all six indicators of psychological problems. In the first column, we present the results for the 1968 sample, i.e. respondents born between 1934 and 1949 who, if at all, experienced their parents' divorce during the period 1934-1965. These results show that there is indeed an association between family type in childhood and the risk of suffering

from psychological problems in adulthood. The respondents who grew up in a dissolved family present almost twice the risk, given controls for gender, age, country of origin, and parents' education, of suffering from these problems compared to their peers growing up in intact families (Model 1). This difference between family types of origin is statistically significant at the 1 percent level. The associations between the control variables and psychological problems are generally in the expected direction. Female respondents and respondents born abroad report a relatively high risk for psychological problems. Age, on the other hand, exhibits little association with psychological well-being. It should be noted, however, that this might be due to the relatively young age of the present sample. Among 19-34 year olds, increasing age may not yet be an important determinant for reduced well-being. In the 1968 sample, highly educated respondents report more psychological problems. The reason for this result is unclear but, at the time, it might have been more legitimate and less stigmatizing for these respondents to admit to psychological problems. In the 2000 sample, this difference by educational level no longer persists

Table 2. Odds Ratios (Binary Logistic Regression) for Any Psychological Problem (Six-Item Variable) by Family Type in Childhood and Survey Year, Controlled for Other Background Factors. Respondents Aged 19-34.

	Survey Year (Year for Parental Divorce)					
	1968 (Parental Divorce 1934-1965)		*2000 (Parental Divorce 1966-1997)*		*1968 and 2000 (Pooled Data)*	
Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Divorced Parents	1.94**	1.19	1.48**	1.14	1.90**	1.27
Woman	2.71***	2.78***	1.66***	1.72***	2.09***	2.15***
Age in Years	1.02	1.02	1.01	1.03(*)	1.01	1.02*
Born Abroad	1.75(*)	1.40	1.52*	1.36(*)	1.64***	1.41*
Parents' Education (Dominant)						
Vocational school	1.26	1.22	0.96	0.96	1.15	1.11
Lower secondary school	1.34	1.27	1.00	1.02	1.22	1.17
Upper secondary school or higher	1.96***	1.85***	1.09	1.13	1.38**	1.34*
Family Dissension		2.10***		1.59**		1.79***
Economic Hardship During Upbringing		2.12***		1.98***		2.08***
Years of Education		1.04		1.00		1.03(*)
Married/Cohabiting		0.91		0.70**		0.78**
Survey Year 2000					1.85***	1.78***
Divorced Parents*Survey Year 2000					0.79	0.88
Constant	0.04***	0.02***	0.25***	0.18***	0.07***	0.05***
Nagelkerke R^2	0.091	0.129	0.035	0.067	0.099	0.132
N	1,633		1,460		3,092	

*** p≤0.001, ** p≤0.01, * p≤0.05, (*) p≤0.10.

When we add controls for family dissension, economic hardship during upbringing, respondent's education, and civil status (Model 2), the excess risk for psychological problems among respondents from dissolved families diminishes substantially, to 19 percent, and ceases to be statistically significant. Additional and deepened analyses (see appendix) show that the decrease is almost entirely due to the control for family dissension, whereas controlling for economic hardship during upbringing, although per se being strongly associated with psychological problems, has only a limited impact and controls for respondent's education and civil status have no impact on the association between family type in childhood and psychological well-being as adult. These results suggest that a strongly contributing reason for young adults from dissolved families expressing more psychological problems than respondents from intact families is that the former have experienced family dissension to a much greater extent (see Table 1). However, as noted above, we do not know if family dissension occurred between parents, if it caused the divorce, or if it is a consequence of it.

The main issue here, however, is whether the magnitude of the association between family type in childhood and psychological problems in adulthood has changed over time. Model 3 shows the corresponding results of Model 1, but for the year 2000 sample. Again, parental divorce is associated with more psychological problems. The increased risk is almost halved, from 94 percent in the 1968 sample to 48 percent in the 2000 sample, but still remains statistically significant. But is the reduction in magnitude over time significant? To answer this question, we pool the data from both survey years and add survey year and the two-way interaction term family type in the childhood*survey year to the model (Model 5). A significant interaction term would indicate that there has been a change in the association over time. Although we find an estimate below 1 (0.79), indicating a reduction in effect size between 1968 and 2000, it is not statistically significant. We therefore have no statistical grounds for concluding that psychological problems are less strongly associated with parental divorce in 2000 than they were in 1968. Or to put it more precisely, individuals whose parents divorced during the period 1966-1997 do not report greater psychological well-being as 19-34 year olds, compared to individuals from an intact family background, than the corresponding individuals whose parents divorced during the period 1934-1965. Moreover, the strongly significant estimate for survey year 2000 in the pooled data underscores the findings of previous studies, and was apparent already in the descriptive statistics in Table 1, i.e. that psychological problems have increased substantially among young Swedes in recent decades.

As in 1968, the excess risk for psychological problems among individuals from dissolved families is no longer significant when we control for a number of conditions in Model 4 (there is no difference in estimates between 1968 and 2000, as indicated by the non-significant interaction term for divorced parents*survey year in Model 6). Again, deepened analyses (see appendix) show that the strongest reduction in the association is caused by adding family dissension to the model. As for the other independent variables, their association with psychological problems very much resembles the results we found for the 1968 sample. The two exceptions are that the lesser extent of psychological problems among individuals living together with a partner now reaches statistical significance, and that parents' level of education is no longer associated with psychological problems in the respondent.

Table 3. Odds Ratios (Binary Logistic Regression) for Any Psychological Problem (Six-Item Variable), Main Effects and Interactions Terms of Family Type in Childhood, Gender and Survey Year Controlled for Other Background Factors. Respondents Aged 19-34

	Survey Year (Year for Parental Divorce)					
	1968 (Parental Divorce 1934-1965)		2000 (Parental divorce 1966-1997)		*1968 and 2000 (Pooled Data)*	
Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Divorced Parents	1.92(*)	1.23	1.1	0.91	1.89(*)	1.3
Woman	2.71***	2.77***	1.82***	1.89***	2.72***	2.82***
Age in Years	1.02	1.02	1.01	1.03*	1.01	1.02*
Born Abroad	1.75(*)	1.4	1.53*	1.37(*)	1.64**	1.40*
Parents' Education (Dominant)						
Vocational school	1.26	1.22	0.96	0.95	1.14	1.1
Lower secondary school	1.34	1.27	1.01	1.03	1.22	1.16
Upper secondary school or higher	1.96***	1.85***	1.09	1.13	1.37**	1.31**
Family Dissension		2.10***		1.59**		1.79***
Economic Hardship During Upbringing		2.12***		1.97***		2.08***
Years of Education		1.04		0.99		1.03(*)
Married/Cohabiting		0.91		0.70**		0.78**
Survey Year 2000					1.57***	1.48**
Divorced Parents* Survey Year 2000					0.63	0.68
Divorced Parents * Woman	1.14	0.95	1.53(*)	1.56(*)	1.01	1.03
Woman * Survey Year					1.49**	1.52**
Woman * Survey Year * Divorced Parents					1.42	1.49
Constant	0.04***	0.03***	0.22***	0.16***	0.05***	0.03***
Nagelkerke R^2	0.091	0.123	0.04	0.07	0.1	0.14
N	1,633		1,460		3,092	

*** $p \leq 0.001$, ** $p \leq 0.01$, * $p \leq 0.05$, (*) $p \leq 0.10$.

It has been argued that the effect of parental divorce on psychological problems differs for boys and girls. In order to test this hypothesis, we conducted analyses where the two-way interaction term gender*family type in childhood was included in the models of 1968 and 2000 (in Table 3). In fact, in 2000 (but not in 1968) this term reaches statistical significance at the 10 percent level, indicating that the association between family type in childhood and psychological problems in adulthood is slightly weaker for women than for men. We also analyzed whether the association between family type and survey year differed by gender by introducing the three-way interaction term gender*family type*survey year in the pooled data. This interaction term does not reach statistical significance. Although there is a weak tendency that parental divorce is less strongly associated with psychological problems among females (in 2000) there is therefore no difference between genders in the change of this association over time, and in 1968 we could not find any gender difference in the parental divorce-psychological problems association.

Table 4. Odds Ratios (Binary Logistic Regression) for different types of psychological problems (six indicators) by Family Type in Childhood and Survey Year, Controlled for Other Background Factors (Not Shown). Respondents Aged 19-34.

	Survey Year (Year for Parental Divorce)			
	1968 (Parental Divorce 1934-1965)		*2000 (Parental Divorce 1966-1997)*	
Variable	Model 1	Model 2	Model 3	Model 4
General Tiredness	1.22	0.84	1.22	1.00
Insomnia	1.07	0.42(*)	1.40*	1.07
Nervous Trouble	1.87*	1.03	1.97***	1.39(*)
Overexertion	3.22**	1.88	1.62**[a]	1.37
Depression	2.70**	1.24	2.19***	1.34
Mental Illness	4.45*	1,40	1.33	1.12
N	1,633		1,460	

*** p≤0.001, ** p≤0.01, * p≤0.05, (*) p≤0.10.
[a] Difference in estimates between 1968 and 2000 for divorced parents is statistically significant (p≤0.10). This conclusion is based on analyses of pooled data, including both survey years, adding the interaction term family type in childhood*survey year (see appendix).
Models 1 and 3 include controls for Family type in childhood, Respondent's age, Respondent's gender, Respondent's country of origin, and Parents' education.
Models 2 and 4 add controls for Family dissension, Economic hardship during upbringing, Respondent's years of education, and Respondent's civil status.

So far, we have considered reduced psychological well-being as a composite variable, based on the six different indicators. Would we reach any other conclusion if we focus on single items instead, or do they all tell the same story of no or only little change over time? The results presented in Table 4 rather point to the latter. In Models 1 and 3, the "baseline" models for each survey year, parental divorce is associated with four indicators, of which three

overlap between the survey years (nervous trouble, overexertion, and depression). We find a weakening association over time for only one item, overexertion. However, as for the six-item variable, the magnitude of the associations declines substantially when we control for economic hardship during upbringing, years of education, civil status, and above all, family dissension in Models 2 and 4. In fact, hardly any association remains statistically significant.

Our main results, then, are i) that parental divorce, at least for individuals whose parents divorced during the period 1966-1997, is still associated with offspring adult psychological problems, just as it was for those who experienced parental divorce thirty years earlier and ii) that although there is a tendency for the link between family type in childhood and psychological adjustment in adulthood to weaken over time, there is no statistical proof of a significant change. How should these results be understood? Why is parental divorce in childhood still linked to an extended risk for psychological problems in young adults?

In our analyses, we have identified economic hardship and family dissension during upbringing as important determinants for psychological impairment in adulthood. Moreover, we have shown that these conditions are much more frequent among respondents from dissolved families than from intact ones. How have these conditions, and their distributions between family types, changed over time? Let us start with economic hardship during upbringing. In the 1968 sample, i.e. respondents born 1934-1949, 14 percent claimed that they had experienced economic hardship while growing up (see Table 1). This problem was more than twice as common for respondents from a dissolved family background (31 percent). In recent decades, economic growth has led to improved economic conditions for the Swedish population. Accordingly, the share of respondents claiming economic hardship during upbringing declined somewhat, and was down to eleven percent in the 2000 sample, i.e. respondents born 1966-1981. Moreover, the situation has improved for both family types. Given the development of the Swedish welfare state, and its strong focus on income redistribution, it may nonetheless come as a surprise that the relative difference in economic hardship between family types has not declined over time. In 1968, the percentage of children from intact families with economic problems was 13 percent and in 2000 it was eight percent. There was therefore a relative decrease of 43 percent for intact families. For children from dissolved families, however, the corresponding decrease was only 22 percent (from 31 percent in the 1968 sample to 24 percent in the 2000 sample). Moreover, the absolute difference in economic hardship between family types is constant over time (16.6 percent in

1968 and 16.5 percent in 2000). It seems that intact families were more able to benefit from economic growth than dissolved families, and that welfare state efforts to reduce economic inequality between family types were not sufficient. A possible explanation for these findings, however, is that (just as predicted by Goode) in 1968, the level of education of divorced parents was higher than for their counterparts in intact families. By contrast, there are no differences by family type in 2000. A contributory reason for dissolved families still faring worse economically in 2000 is therefore that the category is less positively selected than it used to be, i.e. these parents are no longer better educated than parents in intact families. The effect of economic hardship in childhood on adult psychological well-being is as strong for the 2000 sample as for the 1968 sample (see models 2 and 4 in Table 2). A contributing factor behind the lasting link between parental divorce in childhood and psychological impairment in adulthood might therefore be the constant difference in exposure to economic hardship between family types over time and the unaltered effect of economic difficulties on psychological adjustment.

Serious dissension in the childhood family is also an important determinant for psychological problems later in life. For our sample, the share with this experience has increased, from eleven to 17 percent, during the period under study here (Table 1). This increase is due to two trends: first, it has become slightly more common for individuals from an intact family background to claim severe dissension in their childhood family, from eight to eleven percent between the 1968 and 2000 samples. Second, and more importantly, an increasing proportion of all respondents have grown up in a dissolved family, and dissension is more common in this family type. It is nonetheless important to note that within this category, it has become less common to report severe dissension over time. In 1968, 60 percent of respondents growing up in a dissolved family claimed that they had experienced severe conflict in their childhood family. Three decades later, this proportion had fallen to 42 percent, a change that is statistically significant ($p=0.005$). On the one hand, a contributing reason to why we still observe an association between parental divorce and psychological problems is therefore that divorce is still strongly associated with severe dissension in the childhood family. On the other, a contributing reason to the (non-significant) decrease over time in the association between parental divorce and psychological problems is that the link between parental divorce and serious family dissension is weaker than it used to be and moreover, that the impact of family dissension on psychological impairment seems to have declined over time (see models 2 and 4 in Table 2). In other words, respondents from dissolved families were less likely to

report family dissension in 2000 than their peers in 1968 and, even if they did, dissension was no longer as strong as a determinant for psychological problems.

2.5   Concluding discussion

In this study, we compare the effect of parental divorce on psychological problems for two Swedish cohorts, using the Swedish Level of Living Survey (LNU), collected in 1968 and 2000. We provide additional evidence of the long-term effects of parental divorce since, consistent with British and American studies, we demonstrate that in Sweden there is also an association between parental divorce and psychological problems which persists into adulthood. Moreover, as in previous Swedish studies (Ministry of Education and Culture, 2006; Ministry of Health and Social Affairs, 2001; National Board of Health and Welfare, 2005), we note that there is a general increase of psychological problems among young adults in Sweden. One of our research questions was therefore to clarify whether the increasing experience of parental divorce could be one of the causes of this trend.

We find that the increase of psychological problems is valid regardless of childhood family type. Nevertheless, parental divorce still seems to be at least partly responsible for the general deterioration of psychological health among young adults, since there is a link between parental divorce and offspring psychological impairment and an ever increasing share of young adults have experienced parental divorce during childhood. The picture is more complex, however, since, due to the cross-sectional nature of our data, we cannot determine whether parental divorce per se or other factors that appear in conjunction with divorce cause this link. However, when we control for family dissension and economic hardship during childhood in the model, the negative association between parental divorce and young adult's psychological problems disappears. It therefore seems that parental family disruption can only at most be blamed indirectly for the general increase in psychological problems among young adults in Sweden, as it causes, or is caused by, family dissension and economic difficulties, conditions which in turn are associated with psychological problems in the individual.

The main question in this paper, however, is whether the magnitude of the link between parental divorce and offspring psychological impairment has changed over time. According to the literature, there are numerous reasons to expect that the strength of this link has weakened

due to less stigmatization associated with divorce, less severe divorce motives and less serious family dissension following increasing divorce rates, parents' greater awareness of children's needs and being better able to support their children, and less income inequality between family types, among other reasons. Some of these factors are particularly valid for Sweden, as the divorce and separation rate (for parents) is relatively high in this country (Andersson, 2002, 2003) and it has adopted one of the most liberal divorce laws and implemented one of the most generous welfare states worldwide.

However, contrary to our expectations, our data does not show that the association between parental divorce in childhood and psychological problems in adulthood has diminished significantly over time. Whereas the odds-ratio for reduced psychological well-being for respondents from dissolved families aged 19-34 in 1968, whose parents divorced between 1934 and 1965, was 1.9 times higher than for respondents from intact families, it was 1.5 times higher in 2000, for respondents whose parents divorced between 1966 and 1997. Although this result might imply a small decline over time, the change does not reach statistical significance. When each of the six indicators on psychological problems (general tiredness, insomnia, nervous trouble, overexertion, depression, and mental illness) are studied separately, it is notable that the pattern of a stable association with family type over time is general. Likewise, as Sigle-Rushton, Hobcraft and Kiernan (2005) show in their longitudinal study comparing British cohorts, we therefore find no evidence that the association between parental divorce and psychological problems declines across Swedish generations.

Why does this association persist? The main reasons seem to be that parental divorce is still associated with economic hardship and family dissension in the family of origin, two conditions which, in turn, are strongly associated with psychological impairment in young adults.

First, although economic conditions have generally improved over time, regardless of family type, respondents with divorced parents are still much more likely to have experienced economic hardship during upbringing than respondents from intact families (see Table 1). Moreover, the relative and absolute differences in economic hardship between family types have not declined over time. Does this imply that the Swedish welfare state is not effective in reducing economic differences between family types? Not necessarily. According to international comparisons, Swedish single parents are less exposed to poverty than their

counterparts in most other societies (Bradbury and Jäntti, 1999) and the difference in median income between single-parent and two-parent families is smaller in Sweden than in other countries (Wong, Garfinkel and McLanahan, 1993). Two factors contribute to this situation: a strong income redistribution in general and a high employment rate among single parents (due to economic incentives and a well developed infrastructure, e.g. childcare). The Swedish welfare state therefore seems to be effective in reducing economic differences between family types, but it does not eliminate them entirely. In recent decades, the income gap between single-parent and two-parent families has even widened again (Fritzell, Gähler and Nermo, 2007; Gähler, 2001) and if this trend continues, we would expect to find increasing differences in psychological well-being between individuals from dissolved and intact families of origin in the future. As noted, the variable *Economic hardship during upbringing* captures both objective and subjective economic conditions during childhood. The stable difference between family types could as a consequence also indicate that despite the fact that family policies have reduced the income gap between family types, they have not been able to change the differences in perceptions about the economic situation between family types.

Second, parental divorce and family dissension is still closely linked. In 2000, respondents from dissolved families were four times more likely to claim serious dissension in their childhood family than respondents from intact families (42.5 vs. 11 percent). However, in accordance with the declining hypothesis, we also find that the link has weakened over time. In 1968, respondents from dissolved families were seven times more likely than respondents from intact families to claim serious dissension in their childhood family (60 vs. 8 percent). Moreover, the impact of family dissension on child psychological well-being has weakened over time. What are the reasons behind these changes? One possibility might be that when it was legally difficult to obtain a divorce, and associated with a strong social stigma, it was more common for a divorce to be the result of a strongly dysfunctional marriage. Today, marriages more often end for less dramatic reasons (de Graaf and Kalmijn, 2006), and even as a result of agreement between the spouses, without serious dissension. Moreover, greater general attention to these issues may imply that children can now more openly seek help and support from others when their parents fight. In addition, parents may also have become more aware of children's needs and fears and of the detrimental effect of family discord on children's psychological adjustment. Parents might therefore attempt to minimize children's exposure to conflict or, at least, not expose them to conflict of the same severity as previously.

An advantage of our study is that our data contain identical measures over time of the variables under focus here, i.e. family type in childhood, psychological well-being, and different control variables. However, the main limitations of our study are that: a) our results do not allow causal interpretations and b) we do not have validity scales for measuring psychological problems. Despite these limitations, this study therefore makes a contribution to the literature of parental divorce, showing that in a non Anglo-American country such as Sweden, there is also an association between parental divorce in childhood and offspring psychological problems in adulthood and, furthermore, that the magnitude of this association has not decreased over time, even if divorce and separation has become more common and society should be more adapted to it.

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Chapter 3

The Effect of Divorce on Parent-Child Contacts:
Evidence on Two Declining-Effect Hypotheses[14]

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3.1 Introduction

Family relations play an important role in determining individuals' welfare and in the process of individuals' social inclusion; this is even more so for the most vulnerable groups of the population, such as the economically poor, low educated, physically impaired, or elderly people. In particular, regarding the latter group, previous research has shown that the social networks of elderly individuals tend to be extremely weak and age-segregated, and that parent-child contacts represent a key factor in preventing social isolation. In this context, some recent socio-demographic changes in European societies – namely: population ageing, increasing childlessness rate, divorce rate and geographical mobility – raise some concerns about the social inclusion of the future elderly population.

Here we are particularly interested in studying how the divorce of the parents affects parent-child relations. Previous studies on divorce have found consistent empirical evidence that marital break-up has a negative effect on parent-child contacts in the years immediately subsequent to parental divorce. However, there is relatively little research carried out on the long term effects of marriage dissolution. Furthermore, contemporary research on the topic is confronted with two declining effect hypotheses. Firstly, it has been suggested that the negative consequences of divorce on parent-child contacts decline as the age of the child increases at the time of divorce. Secondly, some authors advanced the hypothesis that the consequences of marital instability in a specific society tend to decrease when divorces become more frequent.

The present paper, by concentrating on the elderly population, aims at analyzing the long-term effects of parental divorce on parent child contacts in four European societies, characterized by very different divorce histories and rates. Moreover, we will provide some evidence on the two above mentioned declining effect hypotheses. In particular, we will try to see if (i) the negative effects of divorce vary according to the age of child at the time of parents' divorce (*individual declining effect hypothesis*); and if (ii) the more common divorce is in a society, the lesser are its consequences (*collective declining effect hypothesis*).

3.2 The negative effects of divorce on parent-child contacts: theoretical background

The rates of separation and divorce have markedly increased in Western countries since the mid-1960s, albeit at a different pace and with varying intensity in different countries. An increasing number of children, therefore, have experienced their parents' divorce while growing up. This latter phenomenon has attracted scholars' attention. In particular, a significant number of studies have focused on the effects of parental divorce on children's well-being and life chances, and on intergenerational relations (for a review of these studies see for example Amato and Keith, 1991a; Amato and Keith, 1991b; Amato 2001; Sigle-Rushton and Mclanahan, 2004).

The academic discussion about the intergenerational effects of divorce has often been very controversial and the "conventional wisdom" on the subject has changed several times (Mclanahan and Sandefur, 1994). Nowadays, after almost three decades of research, it is well established that there is a negative association between parental divorce and children's well-being, life chances and intergenerational relations. This general finding also applies to the specific outcome considered in the present article, i.e.: parent-child contacts. There are several social mechanisms that can explain this negative relation.

The first mechanism is based on the selection hypothesis which argues that parental conflict prior to divorce, and not marital break-up *per se*, is what explains why children from intact families have more contacts with their parents than children from divorced families. In other words, those parents who have frequent conflict are those who are more at risk of separating and, at the same time, they are also those who have less contact with their children. In favor of this argument it has to be noted that the scientific literature has proved that children tend to be drawn into conflict between parents, resulting in a deterioration of the parent-child relationship and general family cohesiveness (Amato, 1986; Johnston, Kline and Tschann, 1989). Moreover, it has been shown that early experiences of parental conflict, i.e. during childhood, have long lasting consequences on the quality of the relationship between children and their parents (Amato and Afifi, 2006; Sobolewski and Amato, 2007). On the other hand, it has also been argued that parental conflict increases or continues after parental divorce (Amato and Keith, 1991a; McLanahan and Sandefur, 1994). When this occurs divorce cannot

be simply considered as a spurious variable, since conflict after marital break-up is part of the divorce process.

Secondly, the negative effect of parental divorce on parent-child contacts might be produced by a change in social norms about family relations that are followed by family members. Thus, for example, in a study carried out in the USA Cooney (1994) found that children's feelings about a given parent were strongly correlated with contacts with that parent in divorced, but not in intact, families. Next, Cooney advances the hypothesis that parental divorce is associated with weakened family obligations, and that family relationships may become more voluntary after divorce. A recent study based on data from Italy adds some complexity to this argument: Albertini and Saraceno (2008) found that parents' divorce negatively affected their contacts with children, but it had no significant effect on the likelihood of receiving support from children. Thus, it would seem that parental divorce has a negative effect on social norms about family contacts but not on those about family support exchange – which are mainly driven by the logic of need and less connected to the quality of the relation.

A third class of explanations has to do with the living arrangements and geographical mobility after divorce. In the years immediately subsequent to parental separation children often experience a decrease, or even a loss, of contact with the non-custodial parent (usually the father). In the case of fathers, this separation further strengths the asymmetry between mother-child and father-child intimacy already fostered by the gender division of labor in the family, and the primacy of the mother as caregiver and emotional centre of the family (Kalmijn, 2007; Tommasini et al., 2004). However, contacts between custodial parents and children might also be reduced. In fact, custodial parents (usually mothers) after the divorce often have to work long hours and suffer from task overload (Amato, 1993). This diminution of contacts between parents and children at a younger age also affects the frequency of contacts between them when the latter becomes an adult.

3.3 Two declining hypotheses

Recently two important questions about the intergenerational effects of parental divorce have arisen in the scientific literature. One is about the causality of this association: whether the effects of divorce on children's well-being and intergenerational relations are due to this event, *per se*, or to some other family/parents characteristics which are closely associated both with the risk of divorce and children's well-being (Painter and Levine, 2000; Ní Bhrolcháin, 2001; Ginther and Pollack, 2004). The second question has to do with the extent of the negative effects of divorce. It has been argued that these effects may possibly decrease as children's age at time of separation increases and, also, if marriage dissolutions are more frequent in a society. As mentioned above, in the present article we would like to provide some evidence on the second of these questions.

3.3.1 Individual declining effect hypothesis

In the literature on the intergenerational effects of divorce there have been a number of studies which have suggested the existence of some variation of these effects with regard to the age of child at the time in which the parents separated. However, the notion that the negative effects decline as children's age increases remains a contentious issue in the literature (Woodward et al., 2000). One group of studies suggests that marital dissolution may be more harmful for younger children than for older ones (Allison and Furstenberg, 1989; Emery, 1988). Others researchers have instead suggested that adolescent children are those who are particularly vulnerable to marriage break-ups (Chase-Lansdale et al., 1995; Fergusson et al., 1994; Wallerstein et al., 1988). Finally, a third group of studies found that the effects of divorce do not vary by children's age at the time of the event (Furstenberg and Teitler, 1994).

One major problem in dealing with this topic is that it is very likely that the relation between the negative effects of divorce and children's age at the event differs markedly depending on the specific type of outcome we are taking into consideration (Hetherington et al., 1989). To the best of our knowledge, among the studies considering the effect of divorce on parent-child contacts, there is only one that, by using longitudinal data, examines how this effect varies according to the age of children at time of divorce, i.e.: Booth and Amato (1994). In

particular, the authors find some evidence to show that the younger the child is when divorce occurs, the more disruptive the divorce is to father-child relations, whereas an insignificant effect is found for mother-child relations.

3.3.2 Collective declining effect hypothesis

The second declining effect hypothesis dealt with here is that the negative consequences of parental divorce decline, or even disappear, when divorces become more frequent in a society. There are several theoretical arguments on which this hypothesis is based, and we briefly review here the most important. Firstly, it has been argued that the diffusion of marital break-up decreases the social stigma associated to it and, thus, decreases its negative effects (Sigle-Rushton et al., 2005; Wolfinger, 1999). Secondly, selection processes into divorce have been called into question. When divorces are rare, only extremely dissatisfied and conflicting couples separate, whereas when divorce becomes a more widespread phenomenon moderately dissatisfied and conflicting couples will also separate (de Graaf and Kalmijn, 2006). Thirdly, a declining effect of divorce might also be due to the increasing role of social policies and mediation programs. As a matter of fact, it is generally assumed that societies with higher divorce rates are more likely to develop mediation programs and generous family policies towards single parent families (Engelhardt et al., 2002). Fourthly, as suggested by Dronkers and Härkönen (2008), it may be that individuals' own parents are not the only people who teach the children about marital and family behavior. Thus, for example, in high-divorce populations children with married parents can learn from divorced families that having few contacts with their parents is socially accepted. In other words, according to this view, there is an aggregate effect of parental divorce that affects not only children from divorced families, but also children from intact families, and therefore this reduces the differences between them.

A number of studies have tried testing the collective declining hypothesis using different methodological approaches, and they have reached quite different conclusions. A first strategy is that of comparing studies from different decades while divorce rates have been on the increase. Adopting this approach Amato and Keith (1991a) found that the extent of divorce effects decreased in the US between the 1950s and 1980s. However, in an update of this meta-analysis Amato (2001) shows that the trend has reversed in studies carried out in

the following decade. In contrast, by analyzing European longitudinal research, Wagner and Weiß (2006) found a negative association between the frequency of divorce and its intergenerational transmission. A second strategy adopted to test the collective declining hypothesis is that of comparing the effect of parental divorce across generations who experienced different divorce rates during their lives. Thus, Ely et al., (2000) comparing three British cohorts found that divorce effects had not decreased. Similar conclusions are reached by Sigle-Rushton et al., (2005) for the UK, and Biblarz and Raftery (1999) for the US. On the other hand, despite adopting the same approach, the results of Wolfinger (1999) point in the opposite direction. Eventually, a third strategy which has been adopted is that of comparing countries or geographical areas characterized by very different divorce histories and rates. By using this approach Ely et al., (1999) found no support for the declining effect hypothesis, and a similar conclusion is reached by Daatland (2007) and Tommasini et al., (2004). However, also in this line, we have studies which, despite adopting the same analytic strategy, find some support for a declining effect. Thus, for example Kalmijn (2008) shows that the negative consequences of marital break-up on parent-child contacts are higher in Southern European countries than in Nordic ones; and Engelhardt et al., (2002), comparing the former West and East Germany, found that the intergenerational transmission of divorce is stronger in the former. We can easily argue, therefore, that the empirical evidence on the collective declining hypothesis is mixed and further analysis is needed.

In the next part of this article we provide some additional evidence on the topic by adopting the latter of these approaches. We compare the long term effects of divorce on parent-child contacts in Sweden, Denmark, Belgium and France. The justification for selecting specifically these countries is that they are characterized by very different divorce rates and histories, levels of social protection provided to divorced parents, social acceptance of divorce. In that respect they are perfect candidates for applying the third of the above mentioned strategies. A further justification for choosing these countries is that in the data base we use there is a sufficient number of divorced parents as to reliably carry out our analyses. Whereas, despite there being quite interesting cases, we have had to exclude Mediterranean countries from our study; in fact they did not have sufficient cases of divorced individuals to perform reliable analyses. In the following section of the paper, before presenting the results of our analyses, we briefly review differences in divorce levels and histories in the four selected countries.

3.4 Sweden, Denmark, Belgium and France: differences in divorce levels and histories

3.4.1 Trends in crude divorce rates

Since the 1960s, Nordic countries have had one of the highest divorce rates among Western societies.[15] Thus, while in 1960 the crude divorce rate in Denmark and Sweden was equal respectively to 1.5 and 1.2, in France and Belgium much lower levels were registered, i.e. 0.7 and 0.5. Additionally, despite the huge increases registered during the following decades, in the 1980s differences remained substantial: 2.7 and 2.4 in the two Nordic countries, against 1.5 in France and Belgium. After this period, however, the former countries experienced a plateau in their divorce trends - this is also due to the significant increase in the number of couples that prefer cohabitation rather than marriage. On the other hand, crude divorce rates have been markedly on the increase both in France and Belgium. In 2004 marriage dissolutions in these two countries were as frequent as they were in Sweden and Denmark. It is worth noting, however, that in the former societies cohabitations are still much less frequent (Nazio, 2008, Popenoe, 2008).

3.4.2 Divorce legislation

All the four selected countries introduced divorce laws comparatively early and started liberalizing them − i.e. making it easier to divorce − from the 1960s onwards (Glendon, 1996). Nevertheless, differences between their legislations on marriage dissolution were, and still are, quite significant.

The Nordic family law is based on the principles of the Lutheran reform which has traditionally been more permissive on family issues than the Catholic Church. In Denmark divorce was introduced in 1582 while the Swedish Lutheran State Church only introduced it in 1734 (Hussain and Kangas, 2009). In the *ancient régime* the majority of family laws fell within the jurisdiction of the Catholic Church, and it was not until the 1792 revolution that the possibility to divorce was introduced in France. Divorce was also allowed under the

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[15] The source of the following data on crude divorce rates is Eurostat.

Napoleonic Code (1804) – although there were significant differences with respect to the previous norms; the law was abolished in 1816 and then reintroduced in 1884 (*Loi Naquet*), and it remained unchanged until the 1974 reform (Dutoit et al., 2000). Belgian divorce law originated from the French legal system, and the norms were those of the 1804 Napoleonic Code. The Belgian legislation of divorce remained unchanged until the 1974 reform (Senaeve, 2001). Since the 1960s all of these countries have adopted much more liberal divorce laws; however marked differences remain.

In 1973 Sweden substantially modified the legislation on divorce, the main changes being: (i) all fault grounds were eliminated; (ii) unilateral divorce was made a matter of unqualified legal right; (iii) no reasons for divorce need to be given; (iv) all provisions of prior law requiring efforts to be made to bring the spouses to a mediator were eliminated; (v) divorce was made possible without any waiting period unless one spouse opposes or has custody of children under sixteen, in which cases a six month period of consideration must be observed (Glendon, 1996).

In 1969 the Danish Contraction and Dissolution of Marriage Act of 1922 was amended (Lund-Andersen and Krabbe, 2003). Divorce was liberalized: the bases for separation were less restrictive; it was no longer necessary to give a specific reason for not being able to continue in the marriage; and unilateral separation was possible, when the court considers the marital relationship to be irretrievable. It is worth noting, however, that the liberalization in Denmark was less far reaching than the one implemented in Sweden. In fact, a period of separation before divorce is still required in certain circumstances, and both fault and non fault divorces are still possible (Verschraegen, 2004). The Danish marriage Act was modified in 1989, further extending the liberalization of the divorce process.

In France, until the reform of 1974, divorce was based on fault. Therefore, spouses who wished for a divorce had to allege faulty conduct of one partner, even though they both agreed upon termination of their marriage. The 1974 reform had the purpose of liberalizing divorce but it remained linked to the notion of fault (Verschraegen, 2004; Glendon, 1996). Three new grounds of divorce were introduced. First, divorce was made possible by mutual consent, with two possible variations: divorce on joint application by the spouse and divorce

applied for by one and accepted by the other. The second ground for divorce was irretrievable breakdown of marriage. In this case, a spouse can present a unilateral petition of divorce without allegation of fault. However, to access this possibility six years of *de facto* separation was required and, moreover, a petition for divorce on this ground may be dismissed if it is established that the divorce would entail material or moral consequences of exceptional hardship for the unwilling spouse or for their children (Glendon, 1987). The third ground for divorce was based on fault. This type of divorce could be only granted if one of the spouses has seriously or repeatedly violated the marital duties or s/he has been sentenced to a criminal punishment. In 2005 a new reform of divorce has been approved and the notion of fault has been suppressed.

In Belgium, until 1974, there was the possibility of divorcing on the ground of fault or by mutual consent, although the latter possibility was strictly regulated. After the reform divorce could be obtained after ten years of separation, even against the will of the "non-faulty spouse". The spouse of a mentally ill person could also divorce, after ten years of separation. The following reform (introduced in 1982) reduced both terms to five years (Pintens and Torfs, 2003). From the nineties successive reforms have radically changed the divorce procedure, although the grounds for divorce remained unchanged. On the other hand, the divorce procedure by consent has been fundamentally simplified and the law introduced in 2000 has reduced the duration of separation to 2 years.

3.5   Data and methods

The database we use in our empirical analyses is the Survey of Health, Ageing and Retirement in Europe (SHARE).[16] SHARE is a longitudinal, multidisciplinary and cross-national survey representing the European population aged 50 and older. Additionally, the partners of selected individuals, independently of their age, were also interviewed. The first wave of SHARE took place in 2004 and 2005 with twelve participating countries.

SHARE contains detailed information on the social, economic and health situation of elderly Europeans, including information on the last twelve months of contact with each child – in

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[16] This paper uses data from release 2.0.1 of SHARE 2004, see www.share-project.org for a full list of funding institutions, and for an introduction to the SHARE data set and its methodological aspects.

particular, personal, phone and mail contacts are taken into consideration. Furthermore, one of the major advantages of SHARE is that information is provided on respondents' children. Some general information – such as age, gender, or residential proximity to parents – is available for each child. Additional information – such as frequency of contact with parents, employment and marital status, number and age of own children – is available for the four children who live closest to the parental home. We have created parent-child dyads for each of the four children for which additional information is available (conditioned by whether the child is a natural child and not a step, fostered or adopted one). By choosing dyads as units of analysis we are able to consider the specific characteristics of each child as well as the parent-child relationship at the same time.[17]

It is worth noting that, despite the fact that we sometimes use the expression "parent-child relation", what we are focusing on in the present paper is a variable providing information on parent-child contacts – and not, for example, on resource exchanges. The variable distinguishes the following categories, according to living arrangements and frequency of contact: (i) parent and child living in the same household; and among non co-residing parent-child dyads (ii) daily; (iii) several times a week; (iv) one to four times a month; (v) less than once a month; (vi) never.[18] Our main independent variable is the parent's marital status. Unfortunately SHARE only provides information on the present marital status of interviewed individuals; additional information is available on whether they have a non registered partner at the time of interview. Following this, we were able to identify the following categories: (i) married/registered partnership; (ii) divorced/separated but has a partner; (iii) widowed but has a partner; (iv) divorced/separated; (v) never married; (vi) widowed. In our analyses we excluded all of those dyads in which the parent is divorced or widowed but actually has a co-residing partner.[19]

In the next section, after presenting a few descriptive analyses, we use multinomial logistic regression to analyze the long term effect of divorce on parent-child contact. In particular we

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[17] Standard errors of all statistics reported below have been corrected for the clustering of dyads within the same household.

[18] Despite the fact that the variable is clearly ordinal, in our multivariate analysis we preferred to treat it as multinomial. As a matter of fact, not only do we want to maintain the full complexity of this variable, but also a Wald test by Brandt preformed on an ordinal regression model shows that the largest part of our variables violate the parallel regression assumption.

[19] Despite the comparison of the divorce effects for re-partnered and non re-partnered parents is of great interest, we were forced to delete re-partnered divorced parents from our sample due the very low number of respondents who share this characteristic.

implemented two main regression models. The first one (*model 1*) includes the following controlling variables: (i) age, gender, education, self perceived health status, gross equivalent income quintile, and country of residence of the parent; (ii) if the parent has other children beside the one considered in the dyad; (iii) age and gender of child. In fact, previous literature on parent-child relations has showed that these factors are connected with frequency of contact. Thus, for example mothers tend to have more frequent contact with children than fathers, and the same applies to daughters vs. sons; also, it has been found that education and income are positively correlated with frequency of contact. The second model (*model 2*) adds to the previous one the following variables: education, presence and age of children, marital status, and labor force status of the child. These variables have also been found to be correlated with parent-child relations. The reason for implementing two models is to better disentangle the possible mediating effects that the latter variables might have. Indeed, as shown in previous literature, child's education, labor market position and family life is strongly influenced by parents' marital status. Therefore, the introduction of these controlling variables can partially "hidden" the negative effect of parents' divorce on parent-child contacts. Thus, it is useful to see to what extent our results are confirmed by implementing both the first and the complete regression model.

As for our analytic strategy, we proceeded in the following way: firstly, we implemented the above mentioned models with the main independent variable, only distinguishing between the different marital statuses of the parents; thus, analyzing the association between parent's divorce and frequency of contact with the child. Secondly, we wanted to see to what extent the divorce effect varies according to the age of child at time of divorce, and so we implemented the same models but, among those who are divorced, we distinguished different groups according to the age of child at time of divorce. Finally we approached the task of analyzing the extent to which there is a significant variation in the effect of divorce according to the social context in which it takes place. In particular, to test the collective declining hypothesis, we implemented two different analytic strategies. Firstly, we implemented models that also include an interaction term between parent's marital status and country dummies; secondly, we implemented the above mentioned regression models independently on each country data, and then compared the size of the coefficients we obtained.[20]

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[20] It is worth noting that due to lack of space we only report coefficients for the variable marital status, all controlling variables coefficients are omitted. Moreover, models that consider interactions terms between

3.6   Results

Our final sample of parent-child dyads in the four selected countries is made up of 21,654 cases: 5,756 from Sweden, 2,981 from Denmark, 6,979 from Belgium and 5,938 from France.[21] The average age of parents is equal to 64.6 years, whereas that of children is 36.1. Parent-child dyads in which the parent is divorced represent about 6.6% of our sample. Recently divorced parents - i.e. those whose divorce took place less than 6 years before the interview – are slightly less than 20%, whereas those who divorced more than 20 years ago are about 32%. The average time that has passed since the parent's divorce took place is 17 years. In the largest majority of cases, therefore, we are observing long term effects of divorce. For what regards age of child at divorce one fourth of divorced parent-child dyads include a child whose age at divorce was lower than 11 years; in more than 40% of the cases the child was between 11 to 20 years old, and older than 20 in the remaining cases. As might be expected the largest proportion of divorced parent-child dyads is to be found in the two Nordic countries (see table 1).

Descriptive statistics reveal that norms about family contacts vary considerably between the two Nordic countries and France and Belgium (see table 2). In the two latter countries the proportion of children who still co-reside or have daily contact with their parents tends to be much higher than in Sweden and Denmark. However, irrespectively of the specific cultural traditions of individual countries, in all of the four societies the frequency of contact of divorced parent-child dyads is markedly lower than that of married parent-child dyads. Thus, for example, the proportion of dyads in which the intergenerational relation is absent or almost broken (i.e. with no or very rare contact) is much higher among divorced parent-child dyads than among married ones.

parent's marital status and country are not shown. The full results of the analyses can be obtained from the corresponding author.

[21] The corresponding number of respondents is 9659: 2584 from Sweden, 1351 from Denmark, 3177 from Belgium, 2547 from France.

Table 1. Distribution of parent-child dyads according to parent's actual marital status by country. Weighted results.

	Sweden	Denmark	Belgium	France
Married	75	74	80	78
Separated/divorced	11	10	5	6
Widowed	15	16	15	16
	100	*100*	*100*	*100*

Table 2. Distribution of parent-child dyads according to frequency of contact by parent's actual marital status and country. Weighted results.

	Sweden			Denmark			Belgium			France		
	Married	Divorced	All	Married	Divorced	All	Married	Divorced	All	Married	Divorced	All
Same HH	12	7	10	11	4	9	15	12	14	19	12	17
Daily	18	14	19	18	15	18	24	16	23	16	11	17
Several times a week	39	28	37	36	28	34	30	27	30	27	26	27
1 to 4 a month	28	44	32	33	43	35	27	33	27	32	40	33
Less than once a month	1	5	2	2	5	2	2	7	3	4	7	5
Never	1	2	1	1	5	1	2	5	2	1	4	2
	100	*100*	*100*	*100*	*100*	*100*	*100*	*100*	*100*	*100*	*100*	*100*

Of course this latter result – i.e. a negative relation between divorce and parent-child contacts – might be driven by a number of different factors. Also, that it is simply a compositional effect cannot be rejected at this point; for instance, we could hypothesize that divorced parents are less educated and thus, since less educated people tend to have weaker intergenerational relations, it is educational level and not marital status that explains the results shown in table 2. Therefore, in order to shed some light on the relation between parent marital status and contacts with children, we need to apply multivariate analysis techniques. Furthermore, by implementing different regression models we will also test the two declining hypotheses discussed above.

First of all, we want to analyze the relation between parent's marital status and parent-child contacts once we have controlled for other relevant parent's and child's characteristics. The models shown in the upper panel of table 3 clearly show that the divorced parent-child dyads are much less likely to have frequent contact (i.e. more than once a week) and more likely to have rare or no contact than married parent-child ones. Therefore, adding to the existing literature - which mainly concentrated on the short term effects of marital instability – our results show that divorce has long term effects. In our sample, on average, the divorce took place 17 years previous to the interview, despite of that intergenerational relations are still weaker than those observed for still married parent-child dyads. Secondly, we want to provide some evidence on the variation of the divorce effect according to the age of child at time of divorce. Thus, we examine the relation between parent-child contacts and parent's marital status also distinguishing, among the divorced, between divorced parent-child dyads for which the age of child at divorce was different. The results of this analysis are reported in the lower panel of table 3. In general these results do not provide evidence in favor of the hypothesis that the negative effect of divorce decreases as the age of the child, nor do they support the alternative hypothesis that divorce effects are stronger for teenagers. Indeed, despite the fact that in some cases differences between the coefficients exist, their confidence intervals largely overlap. Furthermore, even if we only consider the size of the coefficients, no meaningful gradient emerges with respect to the above mentioned hypotheses. Our results, therefore, partly contradict those of Booth and Amato (1994). As a matter of fact, we found no evidence that divorce is more disruptive of parent-child relations when it occurs when children are young.

Table 3. Effect of parent's marital status on parent-child contact (upper panel) and age of child at divorce (lower panel), Relative Risk Ratios from multinomial logistic regressions, 95% c.i. reported in squared parenthesis, coefficients for controlling variables are omitted. The reference outcome is "1 to 4 a month". Weighted results

	Model 1					Model 2				
	Same HH	Daily	Several times a week	Less than once a month	Never	Same HH	Daily	Several times a week	Less than once a month	Never
Married	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.
Widowed	4.07 [2.74-6.06]	1.09 [0.86-1.40]	1.10 [0.89-1.36]	1.10 [0.71-1.72]	2.42 [1.38-4.23]	3.18 [2.15-4.71]	1.01 [0.79-1.29]	1.06 [0.86-1.31]	1.07 [0.68-1.68]	2.24 [1.30-3.88]
Divorced	0.26 [0.17-0.40]	0.45 [0.33-0.60]	0.65 [0.52-0.81]	1.43 [0.94-2.16]	3.02 [1.58-5.76]	0.17 [0.10-0.27]	0.41 [0.30-0.55]	0.63 [0.50-0.78]	1.40 [0.92-2.14]	2.75 [1.50-5.05]
Pseudo r2 (N)			*0.15 (21654)*					*0.20 (21654)*		
Divorced-child 0-10	0.19 [0.09-0.41]	0.49 [0.28-0.84]	0.63 [0.41-0.96]	1.68 [0.81-3.52]	3.19 [1.28-7.95]	0.12 [0.05-0.28]	0.42 [0.24-0.71]	0.60 [0.39-0.91]	1.70 [0.82-3.51]	2.99 [1.19-7.51]
Divorced-child 11-20	0.29 [0.17-0.49]	0.38 [0.24-0.61]	0.66 [0.48-0.91]	1.36 [0.71-2.61]	2.64 [1.09-6.41]	0.18 [0.10-0.33]	0.36 [0.22-0.57]	0.64 [0.46-0.88]	1.32 [0.68-2.57]	2.18 [0.87-5.49]
Divorced-child >20	0.26 [0.09-0.78]	0.45 [0.29-0.71]	0.63 [0.45-0.88]	1.63 [0.89-2.97]	2.80 [1.27-6.18]	0.23 [0.06-0.79]	0.43 [0.27-0.68]	0.61 [0.44-0.86]	1.61 [0.87-2.96]	2.70 [1.22-5.97]
Pseudo r2 (N)			*0.15 (21654)*					*0.20 (21654)*		

Finally, the last goal of our regression analyses is that of testing the between countries differences in the negative effect of divorce. As argued above, this comparison provides an indirect test for the hypothesis that the effect of divorce diminishes the more that it becomes a frequent phenomenon in a specific society. If this was the case we should find that the negative consequences that marital instability has on parent-child relations are smaller in countries with high divorce rates – i.e. Sweden and Denmark – than in countries with low divorce rates – i.e. France and Belgium. In a first step of these analyses, we simply added to the two above implemented regression models an interaction between country of residence and parent's marital status. The results of these models (see appendix) show that the negative effect of divorce on parent-child contacts is not significantly different in the four countries considered – the only exception being that the negative effect on the probability of having several contacts in a week is slightly smaller in France than in the other three countries. These results are also confirmed once we run our regression models separately on the data for the four countries (table 4). In fact, despite (sometimes relevant) existing differences in the divorce effect coefficients, the confidence intervals for these effects largely overlap. The only exception being for the fact that, as in previous analyses, the divorce effect on the outcome "several times a week" is significantly smaller in France than in Sweden, and that on the outcome "never" is significantly higher in Denmark than in Sweden and Belgium – but this only holds for the first regression model. Furthermore, generally speaking, if we take a look at the size of the coefficients the only pattern we are able to detect is some tendency for the negative effect of divorce to be smaller in France than in the Nordic countries. In sum from our regression analyses we conclude that no support is found for either the individual or the collective declining hypothesis.

3.7   Concluding discussion

After several decades of research, sociologists have provided abundant empirical evidence of the existing negative association between parents' divorce and children's well-being, life chances and intergenerational relations. However, there are relatively few studies on the long term effects of divorce. Thus, it remains an open question if divorce has long lasting consequences on parent-child relations, or just short term ones. Furthermore, at present the scientific community is confronted by two relevant questions about this relation: (i) is there a causality in this association?; and (ii) how do intergenerational effects of divorce vary

Table 4. Effect of parent's divorce status (vs. married) on parent-child contacts, Relative Risk Ratios from multinomial logistic regressions, 95% c.i. reported in squared parenthesis, coefficients for controlling variables are omitted. The reference outcome is "1 to 4 a month". Weighted results.

	Sweden		Denmark		Belgium		France	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Same HH	0.17	0.14	0.22	0.22	0.25	0.13	0.28	0.16
	[0.10-0.28]	[0.07-0.25]	[0.10-0.51]	[0.08-0.56]	[0.16-0.40]	[0.07-0.25]	[0.18-0.43]	[0.09-0.31]
Daily	0.36	0.34	0.51	0.46	0.41	0.38	0.46	0.41
	[0.27-0.50]	[0.23-0.50]	[0.34-0.78]	[0.27-0.79]	[0.29-0.57]	[0.25-0.58]	[0.32-0.66]	[0.26-0.66]
Several times a week	0.40	0.39	0.63	0.60	0.57	0.58	0.75	0.72
	[0.32-0.52]	[0.29-0.52]	[0.46-0.86]	[0.40-0.92]	[0.43-0.76]	[0.41-0.81]	[0.58-0.98]	[0.52-0.99]
1 to 4 a month	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.
Less than once a month	1.89	1.84	3.02	3.88	3.05	3.16	1.29	1.25
	[1.15-3.10]	[1.01-3.35]	[1.43-6.38]	[1.38-10.9]	[1.84-5.03]	[1.75-5.70]	[0.82-2.02]	[0.72-2.16]
Never	1.42	1.67	8.65	8.84	1.85	1.68	3.48	3.08
	[0.62-3.29]	[0.44-6.25]	[3.76-19.9]	[2.87-27.23]	[1.05-3.25]	[0.76-3.71]	[1.82-6.62]	[1.31-7.23]
Pseudo r2	*0.18*	*0.20*	*0.16*	*0.18*	*0.12*	*0.19*	*0.16*	*0.21*
(N)	*(5756)*	*(5756)*	*(2981)*	*(2981)*	*(6979)*	*(6979)*	*(5938)*	*(5938)*

according to the age of child at divorce and in different societal contexts? In the present paper, by concentrating on parent-child contacts, we aim, firstly, at providing some additional evidence on the negative association between divorce and intergenerational relations. Secondly we also analyze to what extent the strength of the negative relation between parental divorce and parent-child contacts varies according to the age of child at time of divorce, and to the country of residence.

The results from multinomial logistic regressions analyses provide evidence of an existing negative association between parental divorce and intergenerational relations still many years after the event. In particular, it is shown that, even after controlling for possible compositional effects, divorced parent-child dyads are less likely to have daily or weekly contact than married parent-child dyads. Furthermore, the proportion of dyads for which the relation is absent or almost broken is significantly higher among the former group.

Further analyses are implemented to test for the two declining effect hypotheses. As for the age of child at time of divorce we found no evidence supporting the idea that younger children suffer the most severe consequences of marriage dissolution. Neither did we find evidence that, as suggested by other scholars, adolescent children are more vulnerable than others to this family event. Next, by comparing the relation between parental divorce and parent-child contacts in four countries with very different divorce histories and rates, we tested the hypothesis that the increasing number of divorces in a society might contribute to a decrease in its negative effects. Similarly to what has been found in recent analyses (Daatland, 2007, Tommasini et al., 2004) we found no support for the collective declining effect hypothesis.

It can be concluded, therefore, that while our analyses document a negative relation between parental divorce and the intensity of intergenerational relations many years after the event, they do not provide any evidence in favor of a declining effect. However, it is worth noting that the limitations derived from the type of data available impose some limitation on the interpretation and generalization of our results. First of all, it should be said that we are not addressing here the fundamental problem of causality which is behind any study on the consequences of divorce (Ní Bhrolcháin, 2001). Secondly, even assuming a causal nexus, we cannot disentangle the effects of pre-divorce family life, divorce proceedings themselves, and

events that follow divorce. What we are comparing here, in fact, are simply parent-child contacts between currently divorced and currently married parents.

Despite these qualifications, there are several policy implications of our analyses. Firstly, and most importantly, if divorced parents experience weaker relations with their children, even many years after the event, then we should be more concerned with the social inclusion of the future elderly population. As a matter of fact, as shown by previous research, the social networks of elderly people tend to be quite weak and strongly age-segregated. Parent-child contacts often represent a key factor in preventing the social isolation of the elderly. In a context of an ageing population and increasing childlessness and divorce rates, the weakening of intergenerational relations associated with parental divorce might represent an additional factor that negatively affects levels of social inclusion in European societies. Secondly, our data do not support the idea that we should expect stronger negative effects of divorce for younger children, neither for adolescents. According to these findings, therefore, there is no specific reason for supporting programs to address a specific group of the divorced children population. Finally, the substantial similarity of the negative effects of divorce across societies characterized by very different histories, divorce rates and social acceptance of divorce confirms that these consequences will not decrease as divorce becomes more common.

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Chapter 4

Micro-Level Explanations of the Effect of Growing up in a Single-Mother Family on Arriving Late for School

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4.1 Introduction

In most western countries, it is well-demonstrated that growing up in a single-parent family has a negative effect on children's educational level, while in some countries there is no family structure effect on test scores (Pong, Dronkers and Hampden-Thompson, 2003). Even in countries where family structure affects achievement, several studies show that its effect is stronger and more consistent on educational level than on test scores (McLanahan, 1997; Sigle-Rushton, Hobcraft and Kiernan, 2005; Amato and Keith, 1991). Taking into account these findings McLanahan (1997) suggests that something besides cognitive ability is responsible for the poorer school outcomes of children from non-intact families. Although that there is some evidence that growing up in a single-parent family has stronger effects on school behaviour outcomes than on achievement outcomes (McNeal, 1999), more research is needed about the non-cognitive dimensions of school outcomes in order to explain how living in a single-parent family affects children's educational level.

Furthermore, some well-known theories and voices in the public debate affirm that when the children's and family's resources increase, the negative effect of family structure on children's well-being can decline or even disappear (Houseknecht and Sastry, 1996). In other words, children with more financial and human resources do not experience this negative impact and there are consequently no differences in children's outcomes by family type among those that are richer. This declining hypothesis is very important from a policy point of view, and it underpins most family policies aimed at single-parent families which only aim to improve children's and family's resources. However, the protective effect of the resources on children in this family type is still not clearly demonstrated by previous research.

Using PISA data 2003 from seventeen western countries, the aim of this paper is therefore to study the association between family structure and one of the factors associated with early signs of "disengagement" from school, such as arriving late for school (Willms, 2003) and to determine to what extent the children's and family's resources mediate and moderate the effect of living in a single-parent family on children's school tardiness in several western countries. It is important to note that the main concern of this chapter is not comparison of countries, but to analyze if most western countries follow similar patterns in relation to the effect of single motherhood on arriving late for school and the relationship between family structure and children's resources.

4.2 Why is arriving late for the school an interesting outcome?

Arriving late for school is one of the components of student's engagement, which can be defined as the attention, interest, investment, and effort students invest in their work of learning (Marks, 2000). Educational research has firmly established that children's engagement at school is very important in predicting school-performance (see Willms, 2003 for a review). It can certainly be also expected that students' engagement at the school strongly affects their decision whether or not to pursue post-secondary studies (Willms, 2003). Engagement has an affective and a behavioural dimension (Finn, 1989; Finn and Rock, 1997). The former refers to student's attitudes toward school and the latter to student participation at school. Finn (1989) advances a four-part taxonomy of participatory behaviours, of which the most basic is termed acquiescence, i.e. the youngster's attendance in class, coming to class prepared, and responding to teacher-initiated questions and directions. Kearney (2008a) argues that though definitions based only on missed school days or classes are ostensibly clear measures of attendance, they do not represent the full scope of attendance problems displayed by many youths. He suggests that problematic absenteeism is often manifested by an spectrum of absenteeism that includes complete absences for limited or extended periods of time, periodically or repeatedly skipping classes, chronic tardiness in the mornings, ongoing morning misbehaviour in an attempt to miss school, and attending school under extreme duress precipitating continued pleas to parents and school officials for future non-attendance. Furthermore, considering problematic absenteeism as a continuum of misbehaviours is consistent with the argument that arriving chronically late for school may be the beginning of more severe forms of absenteeism in the future. Indeed, Kearney (2008a) asserts that in many cases, children's frequency and severity of absenteeism worsens over school years, as when a child is chronically late one year, he/she misses some classes the following year, and then skips school entirely.

Student tardiness is clearly a determinant of their academic achievement and educational level (Altenbaugh, 1998; Lleras, 2008). Finn and Rock (1997) also find that arriving on time at school is one of the factors explaining academic success among minority students from low income families. In other words, those that are resilient have a more positive school behaviour than their peers who do not finish high school or achieve low grades. In addition, tardiness is not merely relevant in order to determine educational outcomes but also occupational success. Lleras (2008) find that being late while at high school has significant

effects on earnings ten years later, taking educational level and cognitive skills into account. In addition, tardiness is not only important for those children that arrive late for school, but also for their classmates, since it negatively affects the quality of teaching. In the United States in 2003–04, 31 percent of teachers reported that student tardiness and class cutting interfered with their teaching (Dinkes, Cataldi and Lin-Kelly, 2007). For these reasons, in several countries many schools have adopted various policies to reduce tardiness and other forms of poor attendance (James and Freeze, 2006; Reid, 2003).

4.3   Explanations of the effect of family structure

Why would children living in a single-parent family have more behavioural problems at school than children in two-parent families? Several explanations can be suggested, but the main difference between them is between the theories that argue that the negative impact of growing up in a single-parent family is explained by the differences in the family's and children's resources between family types, and those that do not make a case for the predominance of resources.

4.3.1 Non-resource theories

Non-resource theories argue that living in a single-parent family is negatively associated with children's outcomes regardless of the conditions related with the state of single parenthood. These theories therefore share the following assumption: even if children lived in a single-parent family with the highest amount of economic, human and social resources, they would have more school behavioural problems than those from intact families. However, there are significant differences between them, since some non-resource theories argue that the effect of growing in a single-parent family is spurious, and others argue that this effect is causal.

The first group of non-resource theories contains those related to the selection explanation. There are two non-selection explanations that are not related to children's and family's resources[22].The genetic theory states that parental genes are responsible for both children's

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[22] There is another selection theory but this is related to resources. The socioeconomic selection explanation suggests that parental income and education affects children's educational outcomes and these are good predictors of single motherhood, parental separation and parental death (Jonsson and Gähler, 1997; Härkönen and Dronkers, 2006).

behavioural problems and parental divorce or single motherhood. Indeed, some studies demonstrate that children's adjustment has a genetic component (McGuire et al., 1994) and Jockin, McGue and Lykken, (1996) show that some personality traits related to parental divorce also have a genetic component. However, in contrast to the genetic perspective, studies that compare the impact of parental divorce on behavioural outcomes between adopted and biological children find similar effects (Brodzinsky, Hitt and Smith, 1993; . and Cheadle, 2008; O'Connor et al, 2000). On the other hand, one variant of the selection argument stresses the role of pre-divorce conflict between parents (Amato, 1993). Marital conflict often is associated with parental divorce, and parental discord also has a negative impact on children. Nevertheless, Hanson (1999) shows that conflict prior to divorce explains part, but not all, of the effect of parental divorce on truancy.

The other group of non-resource theories comprises what I have called intrinsic theories, since Trauma, Stress and Nock's theories argue that living in a single-parent family intrinsically has negative effects on children's outcomes. First, Nock's explanation (1988) focuses on parental authority. Its basic postulates are: a) schools are fundamentally hierarchical; b) we learn about authority in the family and not at school, since the former is the primary location for the individual's socialization; c) single-parent families are per se less hierarchical, and parental authority is less defined than in intact families. In fact, several studies have shown that parent-child relationships in a single-parent family are more peer-like, and the parent is less dominant than parents in two-parent families (Demo, 1992; Glenwick and Mowrey, 1986).If according to Nock norms and rules are learnt primarily in the family, children such as those in single-parent families have fewer opportunities to learn this type of behaviour in their family, and therefore have more problems in complying with school obligations, such as arriving at school on time.

Other explanations also emphasize children's socialization. A good co-parental relationship is an essential factor in effective parenting. Co-parental relationship is reflected in the extent to which parents give each other emotional support; cooperate in childrearing and model constructive dyadic skills (Amato, 1998). Parents that do not live together have fewer chances to give each other emotional support than those living in the same home. For this reason, parenting might be less effective in single-parent families, and this could explain why their children have more behavioural problems, such as arriving late for school.

An important percentage of children in single-parent families have experienced parental divorce or separation. Trauma and stress theories argue that parental divorce per se has negative effects on children (McLanahan and Bumpass, 1988; Pryor and Rodgers, 2001). Children initially suffer from a shock or an "acute distress syndrome" when their parents divorce, and might also experience feelings of loss and abandonment as a consequence of this event (Pryor and Rodgers, 2001). In fact, divorce is considered to be one of the most stressful life events (Holmes and Rahe, 1967). It is reasonable to assume that both children's stress and painful feelings can affect their school behaviour.

4.3.2 Resource explanations

Several explanations -economic hardship, parental time constraints, downward social mobility, external childcare, and cultural resources[23] -share the assumption that the negative impact of growing up in a single-parent family declines when family's and children's resources increase. In other words, family structure per se does not have an impact on children's outcomes, since this association is explained by the fewer resources that children in single-parent families have, compared with their counterparts in two-parent families. Coleman (1988) argues that family background is analytically separable into three different components, which are financial, human, and social capital. Each of the following explanations stresses one of these components.

Extensive research has shown a strong association between divorced and single-parent families and economic deprivation (McLanahan, 2004; Uunk, 2005). Furthermore, the risk of school behavioural problems is higher in children from low income families than in their counterparts in high income families (Zhang, 2003; Kearney, 2008b). Many poor families live in deprived neighbourhoods with poor quality schools without a punctuality and attendance policy. Children in poor families might also have to work when they are still at school in order to maintain family incomes, and it is reasonable to assume that this might affect their school attendance. Based on these findings, the following hypothesis is formulated: *children with the highest amount of family economic resources do not experience the negative consequences of living in a single-mother family structure (Hypothesis 1).*

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[23] Due to the cross-sectional nature of the PISA data, in this part of the theoretical section, and in the analysis, I do not distinguish if the fewer resources that children from disrupted families have compared with their counterparts in two-parent families is a cause or consequence of single motherhood.

Meanwhile, Jonsson and Gähler (1997) show that parental divorce has negative effects on the offspring's educational outcomes. This is partly because after the divorce children live in a household with less occupational and educational prestige than children in two-parent families since: a) the former tend to live with their mothers; b) fathers, in general, have higher educational and occupational status than mothers; and c) most children from this family type tend to spend little time with their parents, some of whom are not engaged in active parenting (see Amato and Gilbreth, 1999). In addition, in some countries divorced mothers and single mothers have lower levels of educational attainment and occupational status than mothers in two-parent families (Härkönen and Dronkers, 2006). From the child's viewpoint, living in a household with low socio-economic status has important negative effects since parental education and occupation are a fundamental source of children's aspirations (Hauser, Tsai and Sewell, 1983) and children's aspirations are associated to school behavioural outcomes (Henry, 2007). Furthermore, parental education is also strongly related to parenting styles and parental involvement which is in turn associated with absenteeism (Henry, 2007; Kearney, 2008b). The following hypothesis can be derived based on these arguments: *children from single-mother families whose mothers have the highest educational and occupational level are at less risk of arriving late for school than their counterparts whose mothers have the lowest levels (Hypothesis 2).*

Moreover, it is firmly established that the family's cultural resources affect children's educational outcomes (see Barone 2006 for a review), and some research also shows that the effect of family's cultural resources is independent of parental education (DiMaggio, 1982; de Graaf, de Graaf and Kraaykamp, 2000; Barone, 2006). Cultural resources can be defined as familiarity with the conceptual codes that underlie a specific culture, with its major artistic and normative manifestation (de Graaf, de Graaf and Kraaykamp, 2000), and there are various ways of measuring them, such as interest in art and classical music, theatre and museum attendance, and reading literature (Barone, 2006). In families with low levels of cultural resources, school-related values are less important and there is friction between the home and school environment, which leads to children experiencing the school's cultural climate as hostile, resulting in poor school performance (Gesthuizen, de Graaf and Kraaykamp, 2005). To my knowledge, there is no study that focuses on the association between cultural resources and children's school tardiness, but it is reasonable to argue that for parents with low cultural capital, arriving on time at school may not be an important value

and they may therefore not do their utmost to make their children respect school rules. Meanwhile, Roscigno and Ainsworth-Darnell (1999) show that single-mother and stepparent families have lower cultural capital than intact families in the United States. Based on these arguments, I derive the hypothesis that *children from single-mother families whose families have many cultural resources are at less risk of arriving late for the school than their counterparts than their families with fewer resources (Hypothesis 3).*

Several studies demonstrate that single mothers who have never married and divorced mothers supervise and control their children less than mothers in intact families, and this difference explains part of the association between family structure and children's behavioural outcomes (McLahanan and Sandefur, 1994; Simons et al., 1999). One of the possible explanations for this difference in parenting is that mothers in single-mother families spend less time with their children than mothers in two-parent families, and the former are more stressed because they have to work more hours and suffer from task overload (Astone and McLanahan, 1991). Research shows that especially in single-mother families, the quantity of parental time available for children is related to the working status of the mother (Sandberg and Hofferth, 2001) and it is related to quality of parenting (Muller, 1995). Furthermore, Henry (2007) also finds that having unsupervised time after school is related to a higher probability of truancy. It is consequently reasonable to assume that single mothers that work full-time might have less time to supervise their children's punctuality, because they might have to be at work before their children are at school. They might also be working during the evenings and therefore are unable to supervise their children's sleeping habits and these habits might be related to punctuality (see Wolfson and Carskadon, 2003). The next hypothesis is based on this line of reasoning: *children from single-parent families whose mothers have a full-time job are at more risk of arriving late for school than their counterparts whose mothers work part-time or do not work (Hypothesis 4).*

Family is not the only factor that may influence children's school outcomes. As Esping-Andersen (2007) remarks, evidence suggests that outside care of infants during the first year can be harmful for later development, and also that if external care is of high quality, its effect on children's school outcomes are clearly positive, especially for less privileged children. Furthermore, several studies have also shown that childcare and pre-primary education improves children's school readiness, educational achievements, social adjustment and

attendance during the school years, especially among children from disadvantaged groups such as single-mother families (Karoly, Kilburn, Cannon, 2005; Schuetz, 2009).These findings leads to the hypothesis that: *children from single-mother families who have not attended pre-primary education are at more risk of arriving late for school than their counterparts who have attended (Hypothesis 5).*

4.4   Data and variables

This analysis is based on the PISA 2003 database organized by the *Organization for Economic Cooperation and Development* (OECD) under the project title *The OECD Programme for International Student Assessment*. This research aimed at providing internationally comparable measurement on the performance of 15 year-old students. The database comprises data collected in 2003 in 32 countries. In this comparative study, I selected seventeen countries that share similar western cultural traditions and social institutions[24].

PISA 2003 has some strengths and some weaknesses. The main strengths of PISA are its cross-national comparability, and its information on both cognitive and behavioural outcomes. However, a weakness of PISA 2003 is the cross-sectional nature of the data collected. It is a snapshot of 15-year-old students: no information about either the children's further development or about their earlier experiences and outcomes is available (Garib, Martin Garcia and Dronkers, 2007). Another limitation is that there is information about several family types, but the causes of the current family forms are not known. Single-parent families or stepparent families may be due to divorce or separation, parental death or the parents never having lived together. Furthermore, the most recent PISA survey, the PISA 2006, contains no information about family structures. For this reason, PISA 2003 is used in this chapter.

In addition to the original variables, the PISA researchers created a number of aggregate indicators, based on the answers of pupils. Information on these indices and their reliability can be found in the Manual for PISA 2003 Database (Organization for Economic Cooperation and Development, 2005) and the PISA 2003 Technical Report (OECD, 2005), which are both

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[24] The selection of the countries is explained in the next chapter.

available from the OECD web page. Like other researchers, I use these broadly accepted measures rather than developing my own (potentially more contestable) indicators.

As mentioned above, the dependent variable of interest is arriving late for school. The child was asked "In the last two full weeks you were in school, how many times did you arrive late for school?" There are four categories: a) None; b) 1 or 2 times; c) 3 or 4 times; d) 4-5 or more times. Willms (2003) considers that only arriving late for school three or more times is an indicator of low participation. It is reasonable to assume that arriving late for school only once or twice in two weeks does not indicate systematic misbehaviour. Over two weeks, students can arrive late twice for justifiable reasons, such as medical appointments. Furthermore, Kearney (2008a) also argues that assessing tardiness during a two-week period enables non-problematic tardiness to be excluded. For these reasons, this variable is codified as 1- 3 or more times, and 0- none or 1 or 2 times.

The single mother variable is constructed from the child's response to the questionnaire item asking them to indicate who they live with. There are four possibilities, and the student has to indicate which applies to him/her: mother, female guardian (e g, mother and stepfather or foster mother), father, male guardian (eg., stepfather of foster father) and others (*e.g.* brother, sister, cousin, grandparents). Two family structure variables are created using this information: single-mother family (the child said that they lived with only with his/her mother and no other stepparent/guardian), and two-parent family. In all countries, the percentage of these family types is enough to perform the analysis (see table 1). I exclude children that live in single-father families, in father and stepmother families and in mother and stepfather families from our sample, since in some countries, there are not enough cases of these family types to carry out the analysis[25].

The control variables are *sex of the child* (1-females and 0- males) and *immigrant status*. The *immigrant status* variable has three categories: a) native student b) first-generation student; c) second-generation student. This information is recoded in a dichotomous variable (1- first- or second-generation student, and 0- native student).

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[25] In 4 countries, the number of single father families is not higher than 100 cases and in other 8 countries is lower than 200 cases. Furthermore, in 10 countries the number of children living with their father and their mother and stepfather is lower than 50 cases. In Portugal and in Greece, the number of cases of mother and stepfather families is lower than 100 cases, and in Italy and Norway the number of cases of this family type is lower than 200 cases.

The independent variables that measure family's and children's resources are the *father's education*, the *mother's education* and *occupation*, *family wealth*, *mother's type of job*, *cultural resources index* and *pre-primary education attendance*. The father and mother's education are measured with the International Standard Classification of Education (ISCED) scale. Three categories are created: low (None education, ISCED level 1 ISCED level 2), medium (ISCED level 3B, 3C, ISCED level 3A; ISCED level 4; ISCED 5B) and high (ISCED 5A, 6). As mentioned above, in the theoretical section, I would like to test whether living with a mother with the highest educational level reduces the effect of growing up in a single-mother family. For this reason, I only include university and postgraduate degrees (ISCED 5A, 6) in the highest category, and I exclude vocational tertiary education (ISCED 5B) from this category. Including ISCED 5B in the middle or high category of the mother's and father's education does not change substantially the results.

The mother's occupation is measured in the data by the international socio-economic index (ISEI) (Ganzeboom, de Graaf, Treiman, and De Leeuw, 1992). This index was recoded by PISA researchers into a variable with four categories of expected occupational status: (1) white-collar high-skilled occupation; (2) white-collar low-skilled occupation; (3) blue-collar high-skilled occupation; and (4) blue-collar low-skilled occupation. However, it is important to note that I do not incorporate the father's occupation variable in the model, because there is a problem of multicollinearity with the father's education variable, since most cases missing from the former variable are also missing from the latter. Similar results without any substantial variation were obtained both including and excluding the father's occupation from the model.

On the other hand, PISA data does not provide information on family income. However, other PISA indexes such as *Computer facilities at home* and *Home educational resources* are related to family wealth. The former index takes into account the presence of a computer, an Internet connection and educational software in the home, and the latter one considers whether or not the student has a desk, a quiet place for study at home and whether the family has a dictionary, textbooks and calculators. An indicator of *home possessions* is created by computing the mean of these two indexes (minimum=0 and maximum=3.85)[26]. I performed

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[26] The minimum and maximum of home possessions and cultural resources are the same in all countries.

analyses with each of these variables separately, and I obtained similar results to those presented here.

The *Mother's type of job* variable is constructed from the child's response to the questionnaire item that asks them to indicate what her/ his mother is currently doing. There are four possibilities: full-time job, part-time job, looking for a work or doing other than work.

The *Cultural resources index* (minimum=0 and maximum=15.73) is the mean of the PISA index of *family cultural possessions* and the number of books at home. The former is based on having classical literature, books of poetry and books of art at home. The number of books at home variable has the following categories: a) 1-10 books; b) 11-50 books; c) 51-100 books; d) 101-250 books; e) 251-500 books and f) more than 500 books. I performed an analysis with each of these variables separately, and obtained similar results to those presented here**.**

The PISA does not have any information on early childcare education (children age 0-3 years) but there is a question about whether or not the child has attended *pre-primary education* (ISCED0). This stage is primarily to introduce very young children (more than 3 years old) to a school-type environment. This question has three categories: a) none; b) only one year or less c) one year or more. This variable is recodified as 0- none and 1-less than one year or more. I found similar results using different categorizations.

4.5   Sample size and analytical technique

In the samples of the different countries analyzed, I only include children that live in single-mother or two-parent families. Table 1 shows that the percentage of missing cases of the dependent variable is low in all countries. Moreover, Table 1 and Table 2 also show that the mother's type of job, sex, immigrant family, cultural resources and home possessions variables also have few missing cases. By contrast, the father's education, mother's education and occupation variables have a high percentage of missing cases in some countries (especially the father's education variable). Excluding these missing cases would therefore bias the analysis. To avoid this problem, I include all the missing cases of the categorical

variables in the model as dummy variables, with the exception of those of the variable sex (this variable has few missing cases). Table 3 shows that after including all the variables in the model, in most countries I lose less than 3% of cases of the original sample and, therefore, there are sufficient cases to perform the analysis in all countries.

For the analysis, I perform ordinary logistic regression for each country, since my dependent variable has two categories. This procedure might have some problems due to the fact that the different countries have different sample sizes. In fact, eleven of the seventeen countries have around 3,000 to 5,000 cases. However, other countries such as Canada have around 22,000 cases, and Spain, Italy and Australia have around 10,000. It is therefore plausible to assume that some variables can be significant in one country and not in another because of the different sample sizes and not because of the characteristics of this country. Furthermore, the PISA data comes from country samples, which may not be a representative sample of the population. The sample is weighted in order to draw conclusions about each country's enrolled 15-year-old population. The PISA provides a weight that is the student's weight. When the sample is weighted by the student's weight, the number of cases from each country substantially increases, and most of the variables of the analysis become significant. For example, the number of cases in United States is around 4,000 with the unweighted sample, and it is around 2,000,0000 with the weighted sample. However, in order to avoid the two problems related to the sample size mentioned above, I rescale the student weight by creating a new weight, which ensures that the number of cases in each country is 5,000. Using this new weight, all countries have the same sample size and the probabilities of significance are therefore the same in all of them. For this reason, one can be sure when different results are obtained in two countries which also differ in significance that these significance differences are not due to the different sample sizes. I rescale the sample size to 5,000 because as noted above, most PISA countries have between 3,000 and 5,000 cases. However, it is important to stress that I have tried different sample sizes from 4,000 to 10,000 and the results are similar to those presented here and these do not imply a substantial change for the conclusions. In addition, it is important to note that the results generated using weights are similar to those obtained without weighting the sample, and the main conclusions are the same.

4.6 Results

4.6.1 Do children in single-mother families have fewer resources than children in two-parent families?

Descriptive statistics of the variables are shown in Tables 4, 5 and 6. From these data (Table 4) it is clear that the percentage of children in single-mother families that systematically arrive late for school is higher than those from two-parent families in all countries, with the exception of Portugal. However, is this difference due to the unequal distribution of family resources between family types? As economic hardship predicts, children from two-parent families have more home possessions than children from single-mother families in all countries. However, there are important differences between them. The highest differences on home possessions are found in Australia, Denmark, Finland, New Zealand, Sweden, the United Kingdom and the United States. Austria, Italy and Greece have the lowest gap. In addition, children from two-parent families have significantly more cultural resources than those in single-parent families in most countries with the exception of Austria, Italy and Portugal. The largest differences in cultural resources occur in Australia, Canada, Denmark, Sweden, Finland, Norway and the United States. Furthermore, it is important to note that the biggest differences in cultural resources and home possessions are found in Liberal and Social Democratic[27] countries. The percentage of children that have attended pre-primary education is similar between different family types in all nations.

The descriptive results in Table 5 show that in all countries, there are significant differences in mother's type of work by family type. However, in most countries (in the United States, Mediterranean and Conservative countries), the percentage of mothers from two-parent families that work full-time is lower than the percentage of mothers from single-mother families. The former therefore have more time available for their children than the latter. The opposite is true in Social Democratic countries, the United Kingdom, New Zealand and Canada.

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[27] Following Esping-Andersen's (1990) classification of the welfare capitalism, I distinguish between Social-democratic, Liberal and Conservative countries. However, according to Ferrera (1996), I differentiate between the Conservative countries and Mediterranean ones. The Social-democratic countries includes Denmark, Finland, Sweden and Norway. Liberal countries are the United Kingdom, the United States, New Zealand, Australia and Canada. Conservative countries are France, Germany, Austria and Belgium. Mediterranean countries are Portugal, Spain, Italy and Greece.

Table 5 also shows that in most countries, the percentage of mothers that have the highest occupational level is higher in two-parent families than in single-mother families. By contrast, in Austria, Germany, Spain and Portugal single mothers have a higher occupational level than mothers from two-parent families. Taking into account differences in mother's educational level (in Table 6), mothers from single-mother families are better educated than mothers from two-parent families in only four countries - Austria, Portugal, Spain and Italy. In the other countries, there are no significant differences in mother's education by family type, or single mothers have a lower educational level than their counterparts in two-parent families. Table 6 shows that that the general tendency in western countries is that fathers from two-parent families are better educated than their counterparts that do not live with their child. A further interesting finding is that the percentage of missing cases of father's education is substantially higher for children from single-mother families than for children in two-parent families (see Table 3). Table 6 shows that in most western countries the gap in missing cases of father's education between family types is higher than 11%, with the exception of Greece. Furthermore, in New Zealand, Germany, France and the United Kingdom, this difference is greater than 20%.

In sum, most of these results are in accordance with the predictions of family resource theories, since children from two-parent families have a higher amount of several types of resources than children from single-mother families. However, do family's and children's resources mediate the positive association between growing up in a single-mother family and children's school tardiness?

4.6.2 Do family's and children's resources mediate the positive association between family structure and school tardiness?

Table 7 shows the results from binary logistic regressions for several countries. Results are presented in coefficients. I start by estimating a model including only the dummy variables of family structure (Model 1) and control variables such as sex and immigrant status. Two-parent family, male, and native student are used as reference categories. The results of this model demonstrate that living in a single-mother family is positively associated to arriving late for school in all countries with the exception of Portugal. When resource variables are

added to the model (Model 2)[28], there is a reduction in the coefficient for single-mother families in all countries but this effect remains significant and positive in most. However, in Italy and in Spain the coefficient of single-mother family is only significant at the 10 percent level and in Portugal and in Belgium it is not significant. Contrary to the predictions of family and children resources theories, even when family's and children's resources are taken into account, children that live with a single mother are therefore at significantly more risk of arriving late for school than their counterparts in two-parent families in most countries. Resources are important, but cannot alone explain the negative effect of growing up with a single mother.

Nevertheless, it is important to note differences between countries. In Belgium, when resources variables are included in the model, the reduction of the coefficient for single-mother families is higher than 75%. In New Zealand, United Kingdom, Germany and Finland the coefficient for single-mother families is reduced by more than 35%. In Australia, Canada, France, Italy, Norway and United States, this effect declines by between 20 and 30 percent. In Austria, Spain, Denmark, the decrease is less than 5%. But what types of resources are more important?

Separate analyses for each resource are performed. Models 3, 4, 5, 6 and 7 show that there is only a slight reduction in the coefficients for single-mother families when the variables mother's type of work, mother's education, mother's occupation, attendance to pre-primary education and cultural resources are introduced in the models. Nonetheless, there are some exceptions. When the variable cultural resources is included in the model for Denmark and France, the effect of growing up in a single-mother family is reduced by around 10%. In Belgium, this coefficient diminishes by approximately 12% when mother's type of work is considered. In Austria, the effect of single-mother families also decreases by around 15% when mother's occupational level is taken into account.

In contrast, when the variable father's education is included in the model (model 8), there is a reduction of the coefficient for single-mother families in 12 countries. Additional and deepened analyses showed that this decline is entirely due to the category of missing cases of

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[28] The full models are shown in the appendix.

this variable[29]. These results suggest that missing cases of father's education may be a proxy of father-child relations and, for this reason, this variable mediates part of the association between family structure and arriving late for school. In fact, in countries where children from single-mother families have a high percentage of missing cases of father's education, this variable is more important in mediating the effect of growing up in a single-mother family than in other countries. In Belgium, the percentage of missing cases of father's education is 27%, and this explains 45 percent of the effect for single-mother families. In fact, when this variable is introduced into the model, the effect of single-mother families is no longer significant in this country. In the United Kingdom, Germany and New Zealand, this percentage is also around 30% and it mediates between 14 and 23 percent of this effect. In Australia, Canada, France, Greece, Italy, Norway and United States, missing cases of father's education explain less than 10% of the impact of single-mother families. The variable missing cases of father's education is not relevant in order to mediate the effect of growing up in a single-mother family in Sweden, Denmark, Spain and Austria.

When the variable home possessions is added to the model (model 9), there is a decrease in the effect of single-mother families in 15 countries. However, it is important to note that in Austria, the coefficient for single-mother families does not change or even increase when home possession is included, and that this country has the lowest gap in home possessions between family types. In Denmark and Greece, this coefficient is reduced by less than 10%. In contrast, in Belgium, New Zealand and the United Kingdom the decrease is greater than 25%, and in Belgium the effect of single mother is no longer significant when this variable is included in the model. In the other countries, the reduction of this effect is between 10 and 20%. It therefore seems that in most countries analyzed, the home possessions variable explains a non-negligible part of the effect of single-mother families but does not account for the entire effect.

4.6.3 Do family's and children's resources moderate the positive association between family structure and school tardiness?

The main issue here, however, is whether the magnitude of the association between family type in childhood and behavioural problems declines when the amount of family's and

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[29] For these analyses, I created a sample excluding missing cases of father's education and when I included the variable father's education in the model, there was not any decrease of the coefficient of single-mother family. For this reason, I consider that the decrease is due to the category of missing cases of father's education

children's resources increases. In other words, do family's and children's resources moderate the negative consequences of living single-mother family? In order to answer this question, interactions between family structure and various types of resources are performed. The main effects and the interaction terms between family structure and children's resources are shown in the following tables.

It was predicted that children with the highest amount of family economic resources do not experience the negative consequences of living in a single-mother family structure. However, table 8 shows that this hypothesis is only true in two countries, since the interaction between home possessions and single-mother family is significant and negative only in Norway and in Sweden. Taking into account the development of the welfare state in Scandinavian countries, it is surprising that only in these countries, the effect of single mother families is reduced when children's home possessions increases. Surprisingly, it seems that the economic hardship explanation is more important in these countries than in others. For children with the lowest amount of home possessions, the effect of single-mother families is 1.69 in Norway and 1.08 in Sweden. For children with the highest amount of resources, this effect is 0.23 in the former and 0.31 in the latter[30]. It is important to note that for wealthier children, the effect of growing up in a single-mother family is still positive and non negligible.

However, contrary to what was hypothesized, the interaction between single-mother families and home possessions is positive and significant in Spain (b=0.43) and in the United Kingdom (b=0.26). This means that in these countries, the effect of single mother on arriving late for school is higher for children with the most home possessions than for children with the least. In the other countries, this interaction is not significant. It is therefore possible to say that in most countries analyzed, the number of home possessions does not reduce the effect of growing up in a single-mother family.

Table 8 also shows that in all countries, the interaction between cultural resources and single-mother family is not significant. This indicates that in the countries studied, having a high

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[30] These effects are calculated as follows: in the case of Sweden for example, Table 4 shows that the interaction variable between single mother and home possessions is -0.20. The minimum and maximum values of this variable are: minimum= 0 and maximum=3.85. I multiply the effect of -0.20 by 0 and 3.85 and then I add the effect of single mother (1.000) . The formula is main effect + interaction term * minimum/maximum resources variable. In Sweden, for children with the most home possessions, the effect of single mother therefore, is 1.0 and this effect is 0.35 for children with the least.

amount of cultural resources at home does not reduce the effect of growing up in a single-mother family. In other words, cultural resources do not moderate the effect of family structure on arriving late for school.

It was also hypothesized that the effect of single-mother families is lower for children with a mother with the highest occupational level or educational level than for those with a mother with the lowest levels. Table 9 shows the main effects and interaction terms between the single mother variable and several categories of the mother's occupation: white collar high-skilled occupation; white collar low-skilled occupation; and blue collar-high skilled occupation. The reference category is blue collar low skilled occupation. The interaction between the single mother variable and the white collar high skilled mother category, which is the highest occupational level, is not significant in any country. Children from single-mother families therefore do not have a lower risk of arriving late for school when they live with a mother with the highest occupational level. Nevertheless, it is important to note that in New Zealand, there is a negative and significant interaction between growing up in a single-mother family and having a mother with a white collar low skilled (b=-0.64) or blue collar high skilled occupation (b=-1.55). Therefore, the effect of single-mother families is lower for children that have a mother with these occupational levels than for those that have a mother that have the lowest one.

In addition, in table 10 the interactions between single-mother families and medium and high educational level are presented. The reference category is low educational level. Contrary to expectations, the interaction between single-mother families and high educational level is not significant in any country. This indicates that the effect of single mother is the same for children that live with a mother with the highest educational level as for children that live with a mother with the lowest. It is possible to infer that in any western country analyzed, having a mother with the highest educational or occupational level does not moderate the impact of growing up in a single-mother family on arriving late for school.

The interactions between single mother and type of work are shown in table 11. It was hypothesized that for children with mothers working full-time, the effect of single-mother families is lower if their mothers work part-time or do not work. Mothers that do not work full-time might have more time available for their children in order to supervise their school

behaviours. However, the interaction between growing up in a single-mother family and mother with a part-time job is only significant and negative in Norway. In this country alone, the effect of single-mother families is lower for children who have a mother working part-time (b=0.04) than for their counterparts with a mother working full-time (b=0.70). Contrary to predictions, the interaction between growing up in a single-mother family and mother with a part-time job is not significant in the other countries, and it is significant but positive in Belgium. In other words, in most countries, living with a single mother who works full-time is not more harmful for children than living with a single mother that works part-time. In addition, contrary that to what was hypothesized, the interaction between single-mother families and having a mother that is in the category 'doing other than work' is not significant in any country. In all countries, the effect for single-mother families is the same for children with a mother who works full-time as for those that have a mother that is 'doing other than work'.

Single mothers that are looking for a job have more time available for their children than mothers who work full-time. However, this variable could also indicate that these mothers have economic difficulties and for this reason they are looking for a job. In the majority of countries, the interaction between single-mother families and looking for a job is not significant, (and in Sweden it is positive). This suggests that children from single-mother families have the same risk of arriving late for school as their counterparts with a mother who works full-time. Nevertheless, in three countries the interaction between single-mother families and having a mother looking for a job is negative. This indicates that in these countries, the effect of growing up in a single-mother family is lower for children whose mothers are looking for a job than for those whose mothers are working full-time. The effect of single-mother families for children whose mother is looking for a job is -0.43 in Australia, -0.13 in Denmark, -0.93 in New Zealand. Furthermore, the effect of single-mother families for children whose mother is working full-time is 0.57 in Australia, 0.52 in Denmark, 0.33 in New Zealand.

Finally, it was predicted that for children that attended pre-primary education, the effect of growing up in a single-mother family is lower than for children that did not attend. Table 11 shows that this hypothesis is true only in two Liberal countries. In New Zealand and in the United Kingdom, the interaction between single-mother families and attendance at pre-

primary education is significant and negative. For children that do not have pre-primary education, the effect of single-mother families is 0.88 in New Zealand and 0.94 in the United Kingdom. For children with pre-primary education, the effect of single-mother families is 0.25 in New Zealand and 0.25 in United Kingdom. Therefore, it is possible to say that in these two countries, attendance to pre-primary education reduces the effect for single mother families. However, in the other countries the interaction between single mother families and pre-primary education attendance is not significant in the other countries, and this interaction is significant but positive in France and Norway. In most countries, attendance at pre-primary education does not therefore moderate the effect of growing up in a single-mother family on arriving late for school.

4.7 Concluding discussion

In this study, it was shown that children from two-parent families have a larger quantity of several types of children's and family's resources than those from single-mother families. The most interesting finding of the descriptive results is that in all countries (with the exception of Greece) a substantial proportion of children in single-mother families - in some countries around 30% - do not know their father's educational level. This may suggest that there is a general tendency in western countries for some children of this family type to have a distant relationship with their father.

In the multivariate analyses, I found that in most countries, growing up in a single-mother family is positively related to arriving late for school (with the exception of Portugal). It also showed that in most countries, family's and children's resources explain a substantial part of this effect. However, cultural resources, the mother's type of work, attendance at pre-primary school, the mother's education and occupation are not relevant in explaining this effect in most countries analyzed. The types of resources that are most important in mediating the effect of single mother families are home possessions and missing cases of father's education. As shown in other studies, variables that measure the economic situation of the family, such as home possessions, are very important in explaining the effect of growing up in a single-mother family.

It is important to note that even if family's and children's resources are taken into account, the effect of single motherhood remains positive and significant in most countries (with the

exception of Portugal and Belgium). In other words, the different types of resources that are analyzed do not explain the entire effect of growing up in a single-mother family on arriving late for school. These findings indicate that family's and children's resources are important, but might not be the only explanation.

The main question in this study was to analyze the moderating role of several family's and children's resources. It was predicted that certain resources reduce the effect of growing up in a single-mother family on arriving late for school in most countries. However, the results obtained do not support this hypothesis, since the interactions between single-mother families and home possessions, mother's occupational and educational level, pre-primary education attendance and mother's type of work are not significant in most countries. In other words, the general tendency in Western countries is that children from single-mother families with the most and least resources have the same risk of arriving late for school.

But why do family's and children's resources not moderate the effect of growing up in a single-mother family on arriving late for school? One possible explanation could be, as intrinsic theories note, that there is a direct effect of family structure regardless of the amount of resources. Furthermore, other theories such as conflict and genetic theories might also explain why in most countries family's and children's resources do not reduce the effect of family structure. However, the validity of any of these theories cannot be confirmed due to the cross-sectional nature of the data.

Another plausible explanation might be that I do not have the best measures of family's and children's resources. As mentioned above, the PISA data does not provide information on family income and other dimensions of family welfare. This data only has one variable which is related to family welfare, which is home possessions. In addition, the PISA does not have any information on early childcare education (children age 0-3 years) and its quality. For this reason, I used the indicator of attendance to pre-primary education (ISCED) but I did not take its quality into account. Further studies should take into consideration whether the impact of family structure is moderated by family income and childcare attendance and quality.

Moreover, if further studies confirm these findings, this might be important from a policy point of view, because most family policies aimed at single-parent families only focus on improving family's and children's resources such as parental time, family welfare, childcare

attendance and mother's education. Policies focused on improving other dimensions of the family, such as the emotional and relationship dimensions, should also be taken into consideration.

4.8   References

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4.9 Tables

Table 1. Percentage of missing cases: late school arrival, immigrant family, sex, home possessions, cultural resources, attendance pre-primary education.

		Late school	Sex	Immigrant	Pre-primary education	Home possessions	Cultural resources
Australia	Two parent	0.4	0.0	1.6	1.4	0.0	1.5
	Single mother	0.5	0.0	2.5	2.3	0.0	1.3
Austria	Two parent	0.6	0.0	1.0	0.1	0.0	0.8
	Single mother	0.6	0.0	1.4	0.2	0.0	1.7
Belgium	Two parent	0.7	0.0	0.6	1.0	0.0	2.0
	Single mother	1.4	0.0	1.5	1.6	0.0	2.1
Canada	Two parent	1.6	0.0	1.6	2.0	0.0	3.7
	Single mother	2.2	0.0	2.9	2.3	0.0	4.3
Denmark	Two parent	1.3	0.0	0.6	1.4	0.0	2.3
	Single mother	2.0	0.0	1.5	0.9	0.0	2.7
Finland	Two parent	0.3	0.0	1.0	0.9	0.0	0.9
	Single mother	0.5	0.0	1.1	1.0	0.0	0.8
France	Two parent	1.1	0.0	0.8	0.8	0.0	1.3
	Single mother	0.5	0.0	1.5	1.5	0.0	1.8
Germany	Two parent	0.5	0.0	3.1	1.1	0.0	1.1
	Single mother	0.7	0.0	3.8	0.4	0.0	0.8
Greece	Two parent	0.5	0.0	0.7	0.9	0.0	1.4
	Single mother	1.0	0.0	1.8	2.0	0.0	1.8
Italy	Two parent	0.7	0.0	2.4	0.3	0.30	1.6
	Single mother	0.8	0.0	3.0	0.6	0.50	2.2
New Zealand	Two parent	1.0	0.0	1.1	1.0	0.0	2.0
	Single mother	1.8	0.0	2.0	1.6	0.0	2.2
Norway	Two parent	0.9	0.0	0.7	2.0	0.0	1.5
	Single mother	1.2	0.0	0.3	1.7	0.0	1.5
Portugal	Two parent	0.7	0.0	0.5	0.5	0.0	1.1
	Single mother	1.3	0.0	0.8	1.0	0.0	0.9
Spain	Two parent	0.6	0.0	0.9	1.1	0.0	1.0
	Single mother	0.9	0.0	1.5	1.5	0.0	0.7
Sweden	Two parent	1.4	0.0	0.9	1.9	0.0	1.8
	Single mother	1.4	0.0	2.1	2.9	0.0	2.9
United Kingdom	Two parent	1.1	0.0	1.2	1.1	0.0	1.1
	Single mother	0.7	0.0	1.3	1.5	0.0	2.2
United States	Two parent	0.4	0.0	1.9	1.1	0.0	0.8
	Single mother	0.9	0.0	3.4	1.90	0.0	1.6

Table 2. Percentage of missing cases: father's and mother's educational level, mother's type of work mother's occupational level.

		Father's educational level	Mother's educational level	Mother's type of work	Mother's occupational level
Australia	Two parent	3.4	6.2	1.3	9.4
	Single mother	18.9	8.2	1.9	10.5
Austria	Two parent	1.5	2.1	1.9	7.1
	Single mother	19.0	2.8	2.4	8.8
Belgium	Two parent	7.1	8.7	1.1	5.5
	Single mother	27.2	12.0	1.4	7.1
Canada	Two parent	1.8	1.9	1.7	6.8
	Single mother	16.4	3.1	2.0	7.4
Denmark	Two parent	4.7	5.8	0.9	3.2
	Single mother	20.3	7.4	2.2	4.5
Finland	Two parent	2.0	1.5	0.1	2.9
	Single mother	17.7	2.2	0.2	4.4
France	Two parent	5.9	9.7	0.7	8.0
	Single mother	26.9	11.8	1.2	7.3
Germany	Two parent	7.1	13.8	2.0	10.5
	Single mother	32.3	12.0	1.1	10.9
Greece	Two parent	0.0	0.7	1.3	9.0
	Single mother	0.0	0.5	0.7	10.9
Italy	Two parent	1.1	1.6	0.8	3.4
	Single mother	11.7	2.0	1.1	4.2
New Zealand	Two parent	13.6	16.1	1.2	17.1
	Single mother	35.5	19.7	1.8	19.7
Norway	Two parent	4.4	4.5	1.0	5.2
	Single mother	16.1	5.8	0.8	6.1
Portugal	Two parent	2.4	26.4	0.5	3.8
	Single mother	18.6	22.8	0.3	5.6
Spain	Two parent	5.0	9.2	0.5	3.7
	Single mother	23.9	10.1	0.8	5.4
Sweden	Two parent	5.3	6.6	1.1	4.6
	Single mother	20.6	12.4	1.0	7.3
United Kingdom	Two parent	7.4	7.7	1.1	4.7
	Single mother	35.1	11.2	1.5	7.4
United States	Two parent	1.5	3.1	1.6	11.4
	Single mother	18.9	4.7	1.8	11.7

Table 3. Number of cases by country and family type.

		Number cases unweighted sample	Percentage by family type	Number cases after the analysis	Percentage total missing cases	Number cases weighted sample
Australia	Two parent	8374	79.7%			
	Single mother	2133	20.3%			
	Total	10507	100%	10300	2.00%	5000
Austria	Two parent	3465	84.6%			
	Single mother	629	15.4%			
	Total	4094	100%	4031	1.5%	5000
Belgium	Two parent	6259	84.5%			
	Single mother	1146	15.5%			
	Total	7405	100%	7220	2.5%	5000
Canada	Two parent	18556	82.8%			
	Single mother	3844	17.2%			
	Total	22400	100%	21219	5.3%	5000
Denmark	Two parent	2691	77.4%			
	Single mother	786	22.6%			
	Total	3477	100%	3341	3.9%	5000
Finland	Two parent	4068	82%			
	Single mother	892	18%			
	Total	4960	100%	4904	1.1%	5000
France	Two parent	2929	80.5%			
	Single mother	710	19.5%			
	Total	3639	100%	3554	2.3%	5000
Germany	Two parent	3290	84.4%			
	Single mother	609	15.6%			
	Total	3899	100%	3806	2.4%	5000
Greece	Two parent	2954	77.2%			
	Single mother	872	22.8%			
	Total	3826	100%	3747	2.1%	5000
Italy	Two parent	9223	85.9%			
	Single mother	1515	14.1%			
	Total	10738	100%	10526	2.0%	5000
New Zealand	Two parent	2915	81.7%			
	Single mother	655	18.3%			
	Total	3570	100%	3462	3.0%	5000
Norway	Two parent	2512	74.9%			
	Single mother	841	25.1%			
	Total	3353	100%	3277	2.3%	5000
Portugal	Two parent	3450	85.2%			
	Single mother	601	14.8%			
	Total	4051	100%	3969	2.0%	5000
Spain	Two parent	8814	87.7%			
	Single mother	1240	12.3%			
	Total	10054	100%	9918	1.4%	5000
Sweden	Two parent	3010	77.9%			
	Single mother	854	22.1%			
	Total	3864	100%	3737	3.3%	5000
United Kingdom	Two parent	6353	79.5%			
	Single mother	1635	20.5%			
	Total	7988	100%	7822	2.1%	5000
United States	Two parent	2913	69.6%			
	Single mother	1273	30.4%			
	Total	4186	100%	4180	0.1%	5000

Table 4. Descriptive results: late school arrival, immigrant family, sex, home possessions, cultural resources, pre-primary education attendance.

		Late school	Immigrant	Female	Home possessions		Cultural resources		Pre-primary education
		%	%	%	Mean	Difference	Mean	Difference	%
Australia	Single mother	9.5***	23.1	48.7	3.08		7.30		92.8
	Two parent	15.5***	21.9	51.2	3.40	0.33***	7.94	0.65 ***	92.8
Austria	Single mother	6.0**	13.7	50.5	3.03		8.14		96.5
	Two parent	8.6**	10.7	48.9	3.18	0.15***	8.24	0.10	95.5
Belgium	Single mother	7.0**	11.3	48.0	2.91		7.10		97.4
	Two parent	10.0**	14.1	49.5	3.25	0.34***	7.47	0.37 **	97.9
Canada	Single mother	13.9***	21.4	50.3	3.08		7.72		89.6*
	Two parent	21.2***	19.4	52.8	3.37	0.29***	8.42	0.70 ***	91.6*
Denmark	Single mother	14.1***	6.3	49.1	2.70		7.87		96.0
	Two parent	20.3***	7.5	55.9	3.03	0.33***	8.58	0.71 ***	97.2
Finland	Single mother	13.1***	1.6	49.8	2.89		8.24		97.4***
	Nuclear	18.8***	3.0	53.2	3.21	0.33***	8.86	0.61 ***	93.7***
France	Single mother	6.8***	14.8	51.8	2.93		7.85		98.0**
	Nuclear	12.2***	15.3	58.5	3.18	0.26***	8.25	0.40 ***	96.2**
Germany	Single mother	5.0**	16.7	49.9	3.10		8.00		94.7
	Nuclear	8.1**	11.4	52.1	3.34	0.24***	8.42	0.42 ***	95.2
Greece	Single mother	16.6**	6.9	53.5	2.39		8.86		94.5**
	Nuclear	19.8**	9.0	50.1	2.47	0.07***	9.13	0.28 **	91.7**
Italy	Single mother	14.3**	1.7	52.3	2.86		8.72		94.9
	Two parent	17.8**	2.4	52.4	2.98	0.12***	8.94	0.22	94.3
New Zealand	Single mother	15.6***	21.9	47.8	2.95		7.26		91.0
	Two parent	22.9***	15.4	54.7	3.30	0.36***	7.77	0.51 ***	91.1
Norway	Single mother	9.2***	5.0	50.0	3.24		8.43		90.3
	Two parent	15.2***	6.5	51.1	3.45	0.21***	9.27	0.84 ***	91.5
Portugal	Single mother	14.0	3.8	52.9	2.80		8.17		72.0
	Two parent	14.5	8.6	55.5	3.00	0.20***	8.16	-0.01	72.9
Spain	Single mother	14.2**	2.8	50.5	2.87		8.42		93.6
	Two parent	17.0**	5.7	52.2	3.06	0.19***	8.91	0.49 ***	93.3
Sweden	Single mother	18.1***	10.8	49.7	2.91		7.84		86.7
	Two parent	28.6***	14.7	52.8	3.31	0.41***	9.07	1.23 ***	85.0
United Kingdom	Single mother	12.8***	8.5	54.1	3.08		7.98		94.0
	Two parent	19.1***	9.4	55.6	3.37	0.30 ***	8.49	0.51 ***	92.6
United States	Single mother	9.0***	15.6	49.2	2.90		7.78		96.2
	Two parent	15.8***	14.1	49.7	3.28	0.38 ***	8.65	0.86 ***	95.2

Note: For means, independent samples t-test and chi square test for percentages.*p <0.10, **p < 0.05, *** p<0.001. The gap in home possessions and cultural resources is calculated by subtracting a single-mother family from a two-parent family.

Table 5. Descriptive results: mother's type of job and mother's occupational level

		Mother's type of job				Mother's occupation			
		Full-time	Part-time	Looking for work	Other than work	High White	Low White	Blue High	Blue Low
Australia	Two parent	42.8***	27.7***	3.1***	26.3***	48.7	29.8	3.8	17.7
	Single mother	43.0***	25.1***	7.7***	24.2***	47.1	28.5	4.3	20.1
Austria	Two parent	33.4***	33.0***	2.2***	31.4***	27.8***	38.3***	9.2***	24.6***
	Single mother	55.2***	27.9***	4.6***	12.2***	39.3***	40.1***	4.0***	16.6***
Belgium	Two parent	41.9***	24.7***	3.2***	30.2***	42.8**	27.6**	4.3**	25.2**
	Single mother	46.2***	19.1***	10.0***	24.8***	40.2**	31.1**	2.5**	26.2**
Canada	Two parent	58.1***	20.2***	4.5***	17.2***	46.5***	36.9*	3.3*	13.3*
	Single mother	63.0***	15.2***	7.8***	14.0***	41.9***	40.3*	3.0*	14.8*
Denmark	Two parent	70.5***	15.0***	4.1***	10.4***	46.8***	35.4**	3.8**	14.0**
	Single mother	69.1***	8.7***	8.7***	13.5***	45.0***	34.8**	3.0**	17.2**
Finland	Two parent	73.9***	10.5***	4.3***	11.2***	44.1***	39.0**	6.3**	10.6**
	Single mother	70.3***	9.8***	9.8***	10.1***	43.3***	40.2**	3.3**	13.2**
France	Two parent	51.7***	19.4***	5.5***	23.4***	35.5	37.3	4.4	22.8
	Single mother	60.1***	16.1***	8.4***	15.4***	35.4	36.2	4.2	24.3
Germany	Two parent	30.7***	40.9***	4.1***	24.3***	36.0***	41.4**	4.7**	17.9**
	Single mother	43.8***	34.1***	10.3***	11.8***	39.2***	43.6**	3.9**	13.3**
Greece	Two parent	41.6***	7.6***	8.0***	42.8***	29.9***	22.3***	6.4***	41.4***
	Single mother	46.5***	11.0***	10.5***	32.0***	28.4***	29.9***	6.7***	35.0***
Italy	Two parent	34.1***	22.7***	3.2***	40.0***	29.0	24.0	3.5	43.6
	Single mother	39.1***	25.4***	3.9***	31.6***	30.6	27.1	2.9	39.4
New Zealand	Two parent	50.9***	27.5***	3.7***	18.0***	54.0	28.6	6.1	11.4
	Single mother	48.8***	22.9***	7.3***	20.9***	52.0	29.3	5.2	13.6
Norway	Two parent	59.3***	26.4***	2.3***	12.0***	61.6	26.8	3.2	8.5
	Single mother	57.4***	22.7***	4.5***	15.4***	60.0	29.0	2.2	8.8
Portugal	Two parent	61.9***	9.9***	4.4***	23.8***	20.7***	28.7***	14.4***	36.2***
	Single mother	69.2***	11.6***	4.7***	14.5***	24.7***	32.7***	8.9***	33.7***
Spain	Two parent	38.4***	18.5***	3.7***	39.4***	18.6***	27.3***	7.7***	46.4***
	Single mother	50.0***	19.4***	6.3***	24.3***	23.4***	35.6***	6.2***	34.8***
Sweden	Two parent	61.5***	25.5***	4.1***	8.9***	53.0***	36.5***	1.6***	8.8***
	Single mother	57.6***	20.8***	7.8***	13.7***	44.4***	41.7***	2.3***	11.7***
United Kingdom	Two parent	49.9***	28.9***	2.7***	18.6***	35.0*	46.1*	1.6*	17.3*
	Single mother	41.1***	28.8***	7.3***	22.8***	31.2*	47.6*	1.4*	19.8*
United States	Two parent	58.3***	16.9***	4.6***	20.2***	59.1***	32.8***	2.9***	5.1***
	Single mother	68.7***	10.8***	7.3***	13.3***	51.8***	36.7***	3.4***	8.1***

Note: Chi square test *p <0.10, **p < 0.05, *** p<0.001.

Table 6. Descriptive results: mother's educational level and father's educational level.

		Mother's educational level			Father's educational level			
		Low education	Medium Education	High Education	Low Education	Medium Education	High Education	Missing cases
Australia	Two parent	24.6	46.1	29.2	22.7***	44.8***	32.5***	16
	Single mother	26.7	46.8	26.5	26.0***	46.9***	27.1***	
Austria	Two parent	15.4**	78.7**	5.9**	10.6	77.3	12.1	18
	Single mother	12.8**	78.5**	8.7**	12.0	75.6	12.5	
Belgium	Two parent	16.0	60.4	23.6	14.9	55.5	29.6	20
	Single mother	16.8	60.2	23.0	13.5	55.9	30.6	
Canada	Two parent	7.8**	63.1**	29.0**	10.7**	56.7**	32.6**	15
	Single mother	9.1**	67.3**	23.6**	14.4**	58.4**	27.2**	
Denmark	Two parent	16.8**	72.4**	10.8**	17.5**	65.6**	16.9**	16
	Single mother	19.1**	68.2**	12.7**	21.6**	65.4**	13.0**	
Finland	Two parent	15.7**	57.7**	26.6**	21.2	53.5	25.3	16
	Single mother	18.7**	57.1**	24.2**	24.4	52.1	23.5	
France	Two parent	28.7	51.6	19.7	28.6	51.2	20.2	21
	Single mother	30.3	52.1	17.6	29.8	51.7	18.6	
Germany	Two parent	23.3	62.0	14.7	18.5	60.8	20.7	25
	Single mother	24.3	59.6	16.1	20.7	58.9	20.3	
Greece	Two parent	32.0	48.5	19.6	31.0**	46.4**	22.7**	0
	Single mother	31.3	51.0	17.7	35.8**	44.1**	20.1**	
Italy	Two parent	42.0**	44.6**	13.4**	41.1	39.5	14.7	11
	Single mother	38.4**	45.2**	15.4**	44.2	42.9	17.6	
New Zealand	Two parent	14.4***	80.6***	12.3***	16.1**	63.8**	20.1**	22
	Single mother	19.8***	79.0***	12.6***	21.8**	61.8**	16.4**	
Norway	Two parent	7.1	81.3	12.5	8.9	68.9	22.1	12
	Single mother	8.4	79.6	12.7	10.0	69.8	20.2	
Portugal	Two parent	63.1**	23.1**	13.8**	64.0**	23.5**	12.5**	16
	Single mother	58.1**	24.5**	17.3**	54.4**	30.2**	15.3**	
Spain	Two parent	47.4**	35.1**	17.5**	44.4*	35.7*	20.0*	19
	Single mother	42.1**	37.9**	20.0**	39.3*	37.5*	23.2*	
Sweden	Two parent	14.7***	57.1***	28.2***	22.4**	49.2**	28.4**	15
	Single mother	19.8***	52.8***	27.4***	27.1**	51.4**	21.6**	
United Kingdom	Two parent	13.5	72.5	14.0	18.6**	63.0**	18.4**	28
	Single mother	15.4	70.5	14.1	22.4**	61.7**	15.9**	
United States	Two parent	7.6***	63.4***	29.0***	10.3**	60.0**	29.6**	17
	Single mother	10.1***	66.6***	23.3***	12.4**	66.9**	20.7**	

Note: Chi square test. *p <0.10, **p < 0.05, *** p<0 .001. The gap in missing father's education is calculated by subtracting two parent family from the single-mother family.

Table 7. Coefficients of single mother family (Binary Logistic Regression) in several countries in different models with different children's resources variables.

	Model 1	Model 2		Model 3		Model 4		Model 5		Model 6		Model 7		Model 8		Model 9	
	Single mother	All		Mother's type of work		Mother's education		Mother's occupation		Cultural resources		Pre-primary education		Father's education		Home possessions	
	B	B	%	B	%	B	%	B	%	B	%	B	%	B	%	B	%
Australia	0.55***	0.44***	19.94	0.55***	0.6	0.55***	-0.32	0.55***	0.73	0.55***	0.28	0.55***	-0.04	0.50***	8.36	0.48***	13.15
Austria	0.40**	0.38**	5.08	0.38**	5.7	0.37**	8.33	0.34**	15.18	0.43**	-7.78	0.39**	2.64	0.46**	-14.5	0.43**	-6.98
Belgium	0.35**	0.08	75.81	0.31**	12.0	0.34**	1.75	0.36**	-1.67	0.33**	4.68	0.35**	-1.09	0.19	45.43	0.19	46.47
Canada	0.52***	0.41***	20.78	0.51***	1.6	0.51***	1.49	0.52***	0.72	0.51***	2.17	0.52***	0.73	0.47***	10.0	0.42***	18.36
Denmark	0.46***	0.44***	5.43	00.45***	1.2	0.44***	4.04	0.47***	-1.5	0.41***	11.38	0.46***	-0.42	0.48***	-5.22	0.44***	4.26
Finland	0.44***	0.25**	43.38	0.44***	0.0	0.44***	-0.53	0.43***	1.58	0.45***	-2.08	0.43***	1.94	0.36***	19.32	0.32***	26.39
France	0.68***	0.48***	29.48	0.68***	0.0	0.68***	-0.39	0.68***	-0.63	0.62***	9.49	0.68***	0.44	0.61***	9.71	0.55***	18.54
Germany	0.58***	0.38**	35.18	0.61***	-5.0	0.56***	3.02	0.57***	2.48	0.58***	-0.32	0.58***	-0.56	0.49***	16.21	0.51***	12.48
Greece	0.20**	0.18**	10.18	0.20**	-1.0	0.2**	1.81	0.2**	0.35	0.2**	-1.28	0.19**	4.64	0.2**	1.5	0.20**	2.48
Italy	0.26*	0.19*	26.21	0.26**	1.6	0.27**	-2.59	0.26**	-1.11	0.24**	7.87	0.26**	0.32	0.24**	7.69	0.23**	12.35
New Zealand	0.48***	0.31***	35.90	0.46***	4.0	0.47***	3.11	0.47***	1.78	0.46***	4.79	0.48***	0.4	0.41***	14.58	0.33***	30.7
Norway	0.57***	0.46***	19.98	0.56***	1.7	0.56***	1.69	0.57***	0.79	0.58***	-1.2	0.57***	0.4	0.53***	7.37	0.45***	20.47
Portugal	0.01	-0.14***	1500	0.01	0.0	-0.01	200	-0.02	300	0.01	0	0.01	0.87	-0.07	700	0.01	0.00
Spain	0.22**	0.21*	5.47	0.22**	0.7	0.22**	0.81	0.21*	4.39	0.22**	-1.34	0.22**	1.57	0.24**	-7.73	0.18*	16.61
Sweden	0.57***	0.48***	15.41	0.57***	0.3	0.57***	0.37	0.58***	-1.43	0.56***	1.41	0.57***	0.84	0.59***	-4.04	0.48***	15.93
United Kingdom	0.48***	0.30***	37.83	0.47***	2.3	0.46***	3.76	0.47***	2.53	0.47***	1.78	0.47***	1.18	0.37***	23.13	0.34***	28.56
United States	0.65***	0.52***	20.00	0.63***	3.0	0.63***	2.92	0.64***	1.5	0.62***	3.89	0.64***	1.47	0.58***	10.62	0.57***	12.34

Note: *p <0 .10, **p < 0.05, *** p<0.001. The percentage is positive when there is a decrease and negative when there is an increase.

Table 8. Main effects and interaction terms of family structure and home possessions and main effects and interaction terms of family structure and cultural resources

	Model 1 : Home possessions			Model 2 : Cultural resources		
	Single mother	Home possessions	Single mother * home possessions	Single mother	Cultural resources	Single mother * cultural resources
Australia	0.59	-0.17**	-0.04	0.57**	0.00	-0.01
Austria	0.13	0.74	0.07	0.25	0.03	0.01
Belgium	-0.54	-0.48***	0.22	0.12	-0.02	0.01
Canada	0.37	-0.30***	0.01	0.59**	-0.02	-0.01
Denmark	0.86**	-0.01	-0.15	0.47**	-0.01	-0.00
Finland	-0.15	-0.44***	0.13	0.13	-0.02	0.03
France	0.23	-0.51***	0.08	0.42	-0.05**	0.02
Germany	-0.07	-0.38***	0.14	0.66*	-0.01	-0.03
Greece	0.08	-0.01**	0.03	0.36	0.03**	-0.02
Italy	0.06	-0.28***	0.04	-0.08	-0.03**	0.03
New Zealand	-0.05	-0.43***	0.12	0.66***	-0.01	-0.03
Norway	1.69***	-0.31**	-0.38**	0.70***	-0.02	-0.02
Portugal	-0.42	-0.14**	0.10	-0.03	-0.02	-0.01
Spain	-1.03**	-0.26***	0.43**	0.57**	0.00	-0.04
Sweden	1.08***	-0.19**	-0.20**	0.61***	-0.00	-0.01
United Kingdom	-0.48	-0.49***	0.26**	0.27***	-0.03**	0.01
United States	0.27	-0.19**	0.08	0.76**	-0.01***	-0.03

Note: Separately analysis have been done for the interactions of single mother and home possessions and single mother and cultural resources. *p < 0.10, **p < 0.05, ***p < 0.001.

Table 9. Main effects and interaction terms of family structure and mother's occupation

	Main effects single mother and mother's occupation					Single mother *mother's occupation			
	Single mother	White high	White low	Blue high	Missing	White high	White low	Blue high	Missing
Australia	0.58**	-0.05	0.02	0.11	0.26	-0.22	-0.12	0.14	-0.2
Austria	0.69*	0.42*	0.4*	0.59**	0.94***	-0.47	-0.26	-1.2	-0.05
Belgium	-0.12	-0.24	-0.16	-0.23	0.15	0.24	0.45	0.25	0.07
Canada	0.07	-0.01	-0.05	0.02	0.16	0.27	0.53	-0.73	0.58
Denmark	0.37	0.36**	0.32*	0.62**	0.21	0.10	-0.06	-0.58	0.39
Finland	0.13	0.33*	0.14	-0.26	0.55*	0.01	0.24	0.95	-0.1
France	0.21	-0.04	0.02	-0.99**	-0.26	0.42	0.21	1.14	0.45
Germany	0.38	-0.14	0.24	-0.57	-0.08	-0.15	-0.03	0.70	0.25
Greece	0.24	0.08	-0.02	0.07	0.03	-0.02	-0.09	-0.23	-0.17
Italy	0.16	0.11	-0.32**	-0.13	0.4*	-0.09	0.20	0.18	0.23
New Zealand	0.70**	0.10	0.17	0.24	0.19	-0.38	-0.64*	-1.55**	-0.16
Norway	0.07	- 0.14	-0.26**	0.06	0.07	0.42	0.39	0.62	0.46
Portugal	0.13	0.27*	0.36**	-0.08	0.23	-0.23	-0.37	-0.71	-1.02
Spain	0.23	0.04	-0.09	-0.23	0.35	-0.12	0.08	-0.46	-0.08
Sweden	0.53**	0.20	0.13	-0.07	0.32	0.01	-0.08	0.14	-0.37
United Kingdom	0.24	0.15	0.05	0.45	0.18	0.16	-0.07	-0.49	0.46
United States	0.52	-0.04	-0.04	-0.13	0.32	0.06	0.12	-1.12	-0.33

Note:*p < 0.10, **p < 0.05, *** p< .001.

Table 10. Main effects and interaction terms of family structure and mother's educational level.

	Main effects				Single mother * mother's education		
	Single mother	Medium Education	High Education	Missing education	Medium Education	High Education	Missing education
Australia	0.48**	0.05	0.12	-0.1	0.04	0.15	-0.09
Austria	0.49	0.02	0.58*	0.62	0.10	-0.80	-0.53
Belgium	-0.31	-0.13	-0.18	0.12	0.27	0.76	-0.02
Canada	0.46	-0.14	-0.10	0.01	-0.08	-0.29	-0.13
Denmark	0.31	-0.23	0.01	0.35	0.11	0.32	-0.10
Finland	0.38	0.14	0.30*	0.57	-0.12	-0.23	-1.10
France	0.45*	-0.32*	-0.35	0.07	0.01	0.05	-0.69*
Germany	-0.03	-0.04	0.10	-0.39	0.12	0.64	0.38
Greece	0.24	0.10	-0.09	-0.06	-0.04	-0.13	0.03
Italy	0.12	0.05	-0.18	-0.73	0.22	0.07	0.60
New Zealand	0.11	0.07	-0.04	0.21	0.17	0.35	0.16
Norway	0.37	-0.29	-0.15	-0.31	0.24	0.16	0.10
Portugal	-0.33	-0.23*	-0.02	-0.27**	0.37	0.21	0.56*
Spain	0.47**	-0.06	0.00	0.27	-0.30	-0.38	-0.15
Sweden	0.77***	-0.11	0.15	0.00	-0.25	-0.35	-0.37
United Kingdom	-0.05	-0.13	-0.15	-0.05	0.38	0.18	0.35
United States	0.16	-0.11	-0.39	-0.38	0.35	0.69*	0.36

*p < 0.10 **p < 0.05,*** p<0 .001

Table 11. Main effects and interaction terms of family structure and mother's type of job

	Main effects					Single mother *			
	Single mother	Part-time	Looking for a job	Doing other than job	Missing	Part-time	Looking for a job	Doing other than job	Missing
Australia	0.58***	-0.02	0.33	-0.01	-0.64	-0.45	-0.91*	0.01	0.81
Austria	0.43**	-0.19	0.85**	-0.36**	0.34	-0.30	-0.83	0.65	-19.50
Belgium	-0.18	-0.12	0.30	0.21	0.31	0.75*	0.39	0.29	-0.80
Canada	0.29**	-0.11	-0.09	-0.40**	0.16	0.44	0.51	0.17	-0.71
Denmark	0.53***	0.25*	0.63**	0.15	0.95**	0.03	-0.69**	-0.13	-1.95**
Finland	0.16	-0.02	-0.20	-0.28*	-0.82	0.27	0.39	0.31	0.24
France	0.50**	-0.04	0.04	-0.09	0.38	0.49	-0.09	-0.53	-20.47
Germany	0.14	0.05	-0.45	-0.28	-0.13	0.44	0.06	0.51	-18.99
Greece	0.23*	0.14	0.03	-0.15	0.80**	-0.17	-0.43	0.03	-0.89
Italy	0.38**	0.14	0.55**	0.06	-0.25	-0.36	-0.11**	-0.33	0.53
New Zealand	0.33**	-0.24**	0.23	-0.21*	-0.26	0.07	-1.26**	0.12	0.02
Norway	0.60***	0.18	-0.07	0.10	0.67	-0.56**	0.48	-0.26	0.43
Portugal	-0.01	0.21	0.06	-0.05*	0.03	-0.67	-0.39	-0.36	1.21**
Spain	0.22	0.03	-0.25	-0.33**	-0.17	-0.31	0.00	0.25	-3.11
Sweden	0.49***	-0.02	-0.29	0.13	-0.03	-0.12	0.70**	-0.21	0.48
United Kingdom	0.40**	-0.02	0.23	0.16	0.77**	0.01	-0.50	-0.32	-0.47
United States	0.68***	0.13	0.70**	0.12	-1.28	-0.45	-0.49	-0.46	0.67

*p < 0.10, **p < 0.05, ***p < .001

Table 12. Main effects and interaction terms of family structure and children's pre-primary education attendance.

	Main effects			Single mother *	
	Single mother	Attendance	Missing	Attendance	Missing
Australia	0.40	0.24	0.61	0.05	-0.27
Austria	-18.21	0.37	3.81	18.64	-3.81
Belgium	-1.51	-0.19	-0.30	1.64	-2.19
Canada	-0.09	-0.10	0.30	0.55	0.50
Denmark	-19.69	-0.29	0.58	20.14	20.91
Finland	0.43	0.25	0.41	-0.19	-20.34
France	-1.63**	-0.95**	-19.90	2.15**	21.16
Germany	-0.14**	-0.70	-0.62	0.53	2.94*
Greece	0.39	-0.12	0.43	-0.23	-0.17
Italy	-0.51	-0.33	0.16	0.74	-20.16
New Zealand	0.88	-0.11	-0.15	-0.63**	-0.44
Norway	-0.67	-0.41**	-0.24	1.22**	0.76
Portugal	-0.16	-0.10	0.18	0.02	0.58
Spain	-0.01	-0.41**	-0.44	0.21	1.10
Sweden	0.53**	-0.10	0.00	-0.07	0.55
United Kingdom	0.95**	-0.38*	0.41	-0.69**	-2.21**
United States	0.19	-0.13	-19.29	0.31	20.64

$*p < 0.10, **p < 0.05, *** p < .001$

Chapter 5

Macro-level Explanations of the Effect of Family Structure on Arriving Late for School[31]

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5.1   Introduction

Family structures have changed enormously during the later decades of the 20th century, with the introduction of some new family forms (Martin and Kats, 2003). Over the last century, the percentage of children living in a single parent or stepparent families has increased substantially in most Western societies. In spite of this common trend, western countries differ substantially as regards: a) the percentage of children living in disrupted families (single-parent or stepparent families); b) the social stigma associated to them; c) the development of family policies; d) the degree of liberalization of their divorce laws; and e) the educational differences between mothers in disrupted families and in two-parent families. Although several studies over the last forty years have shown that living in a single-parent and stepparent family has negative effects on various aspects of children's well-being (see Sigle Rushton and McLanahan, 2004), over the last decade another relevant question has emerged in academia and in the public debate that challenges the previous findings: is the impact of growing up in a single-parent or stepparent family lower or even inexistent in societies where this phenomenon is more frequent and which are more adapted to this new social change (Amato, 2001; Breivik and Olweus, 2006; Sigle-Rushton, Hobcraft and Kiernan, 2005)? In other words, can countries' characteristics compensate for the negative effects of growing up in a disrupted family compared to a two-parent family on children, and how do they do so? Despite the importance of the question, few studies have been undertaken and the results are inconclusive. In addition, even fewer studies adopt a cross-national approach, which is needed in order to understand the relative importance of public (family) policies, attitudes, and divorce laws (Pong, Dronkers and Hampden-Thompson, 2003; Garib, Martin Garcia and Dronkers, 2007).

Furthermore, even though single-country studies have shown that family structure has more consistent effects on school-behavioural outcomes than on test scores (McLanahan, 1997) and that both are important in explaining children's educational level, the few studies that use a cross-national approach have only focused on the cognitive dimension of the educational process. For this reason, this study is interested on one school behavioural outcome which is arriving late for school. Arriving late for school is related to student's engagement. This has an affective and a behavioural dimension (Finn, 1989; Finn and Rock, 1997). Attendance is one of the main factors in the behavioural dimension (Finn, 1989). Kearney (2008a) argues

that though definitions based only on missed school days or classes are ostensibly clear measures of attendance they do not represent the full scope of attendance problems displayed by many youths. He asserts that problematic absenteeism is often manifested by a spectrum of absenteeism, which includes complete absences for limited or extended periods of time, periodically or repeatedly skipping classes, and also being chronically late in the morning, among other behaviour.

For these reasons, using PISA data 2003 of seventeen western countries, this paper focus on the "late for school" behavioural outcome. In the first step of my analysis, I compare the effect of family structures in different groups of countries, such as Social-democratic, Liberal, Conservative and Mediterranean countries, which have different percentages of disrupted families, different social attitudes to them and have a different degree of development of family policies. In a second step, I try to identify the macro-level indicators - such as family policies, divorce laws, social attitudes and the gap in the mother's education - that explain the variation of the effect of growing up in a disrupted family on arriving late for school between countries.

5.2 Country effects and the relationship between family form and school behavioural outcomes

Some macro-level explanations of the effects of family structure suggest that the negative associations should decline when divorce is a more commonplace phenomenon, and when society is more adapted to this new social change. Other theories contradict the declining hypothesis. Furthermore, all macro-level explanations are related to the micro-level explanations of the effect of family structure and parental divorce, such as financial hardship, quality of parenting and parental conflict. The assumption behind these theories is that the factors that explain the effect of family structure vary at country level. For this reason, this section considers the main macro-level explanations of the effect of family structure in relation to the micro-level explanations.

First, the literature has shown that the financial constraints that children from disrupted families experience compared to their peers from two-parent families is one of the most relevant mechanisms in explaining the negative effect of living in a disrupted family on

children's well-being (McLanahan and Sandefur, 1994). Research has shown a strong association between single-parent families and poverty and the latter and school behavioural problems (Zhang, 2003; Kearney, 2008b; McLanahan, 2004; Lelkes and Zólyomi, 2008). Family policy may alter the relationship between growing up in a disrupted family and poverty. Examples of policies that increase families' financial resources are the payment of child benefits or family allowances. Countries differ as to whether such policies exist, as they might be absent in some countries while they are present in others. Furthermore, countries differ in the size of the benefits or allowances for families with children. As a result, in some countries disrupted families receive more money to compensate for the lack of economic resources than such families in other countries. From these arguments, I develop the hypothesis that *the impact of living in disrupted on children's school behaviour is weaker in countries with generous family transfers (Hypothesis 1).*

Pong, Dronkers and Hampden-Thompson (2003) show that family and child allowances reduce the negative effect of living in a single-parent family on test scores, but de Lange, Dronkers and Woldbers (2008) find no significant interaction between family structure and this kind of policies. One possible explanation for these contradictory results is that the negative effect of living in a single-parent family cannot be compensated in countries where family policies are aimed at families with similar income levels and do not favour single-parent families since even if these are generous, the income gap between family types will remain the same after the income transfers. In fact, Hampden-Thompson (2004) find that in countries where economic policies favour single-parent families, the negative effect of growing up in this family type on test scores is lower than in other countries. For this reason, the following hypothesis is derived: *in countries where single-parent families receive more family transfers than two-parent families, the negative effect of living in a disrupted family is lower than in other countries with family policies that do not favour single-parent families (Hypothesis 2).*

Another important mechanism in explaining the negative effect of living in a disrupted family on children is the parental time inputs explanation (Garib, Martin Garcia and Dronkers, 2007). Research has shown that children in disrupted families spend less time with their parents, and that parental time is a necessary condition for parental supervision which is in turn related to school behavioural outcomes (Sandberg and Hofferth, 2001;Wolfson and

Carskadon, 2003; Henry, 2007). For this reason, for single-mother families, policies that allow parents to spend time with their child and help reconcile the dual role of worker and caregiver may enhance parental time inputs (Hampden-Thompson, 2004). Most western countries have policies for increasing parental time for disrupted families, but the scope of these policies differs. Furthermore, previous cross-national studies have shown that parental leave and other policies that help single mothers to balance work and family life reduce the effect of growing up in a disrupted family on test scores (Pong, Dronkers and Hampden-Thompson, 2003; Garib, Martin Garcia and Dronkers, 2007). The length of parental leave is potentially beneficial for children's school behavioural outcomes, because there is some evidence that maternal employment has detrimental effects on the mother-child attachment in the child's first year of life, and a good mother-child relationship is strongly related to effective supervision (Belsky and Rovine, 1988; Zhou, 2008). In addition, for single parents having a part-time job can be attractive, as they can still spend some time with their children and at the same time they have a higher income compared to a situation of non-employment. Employment of single parents in such countries will have an indirect and positive effect on children's school behavioural outcomes, through the increase in the amount of financial and time resources in the family. Therefore*, in countries with better policies to help parents from disrupted families to balance work and family life and to increase their parental time inputs, the negative effect of growing up in a disrupted family on school behavioural outcomes would be lower than in other countries (Hypothesis 3).*

On the third place, children's childcare attendance is not only important in assisting mothers to balance work and family life. Several studies show that attendance to childcare promotes children's school cognitive outcomes and reduce children's school behavioural outcomes during the school years (Karoly, Kilburn, Cannon, 2005). However, countries differ in the quantity and in the quality of childcare, which leads to differences in the relationship between the family form (growing up with a single parent) and children's school behavioural outcomes. In addition, there is some evidence that the negative effect on test scores of growing up with a disrupted family is reduced in countries with extensive policies for the support of families through childcare (de Lange, Dronkers and Wolbers, 2008). It is therefore expected that *children from disrupted families growing up in countries with ample child care facilities will have less school behavioural problems than children from disrupted families in countries in which such facilities are limited* (*Hypothesis 4*).

Furthermore, according to William J. Goode (1962, 1970, 1993) when divorce is more common, there are fewer legal and social barriers to divorce, and the negative effect of growing up in a disrupted family might consequently diminish. On the first place, relaxed attitudes towards new family forms may reduce the stigma associated with divorce or never married single motherhood. To my knowledge, there is no study that shows the relation between social stigma, school behavioural outcomes and family structure. However, Xu, Zhang and Xia (2008) find that among children that have experienced parental divorce, social stigma have negative effects on children's school performance and well-being. In addition, when social attitudes are more favourable and no-fault divorce laws are easily adopted, couples can obtain a divorce without the need to demonstrate the absolute decline of their marriages (Wolfinger, 1999). It is thus reasonable to assume that when these barriers do not exist, spouses that have not experienced major conflict in their marriages also decide to divorce. Empirical evidence supports this line of reasoning. De Graaf and Kalmijn (2006), in a comparison of several Dutch generations, show that severe divorce motives (e.g. violence and infidelity) are more frequent in the older generations, but relational and psychological motives are the norm in the younger ones. In that respect, Booth (1999) also notes that when divorces became prevalent in the United States, many more moderately dissatisfied individuals also divorced their spouses. Taking into account that parental conflict is negatively associated to children's school behaviour outcomes (Kearney, 2003) and that in countries with high percentage of disrupted families and low social and legal barriers to divorce, most divorced couples do not experience a high degree of conflict in their marriages; it is therefore possible to argue that *the impact of growing up in a disrupted family is weaker in countries with high levels of disrupted families (Hypothesis 5a), liberal divorce laws (Hypothesis 6a) and social attitudes towards new family forms (Hypothesis 7a).*

However, some research findings also suggest the opposite hypothesis. Several researchers demonstrate that the dissolution of low-conflict marriages appears to have more negative effects on children's well-being than the end of high-conflict marriages (Duran-Aydintug, 1997; Hanson, 1999). Furthermore, comparative studies on the effect of family structure on test scores find some evidence in that direction. Pong, Dronkers and Hampden-Thompson (2003), Garib, Martin Garcia and Dronkers (2007) and de Lange, Dronkers and Wolbers (2009) show that the negative effect of growing up in a single-mother family on test scores is greater in countries with a high percentage of this family type. From these arguments, the

following hypotheses are proposed: *the effect of growing up in a disrupted family is stronger when the percentage of disrupted families is higher (Hypothesis 5b) and the divorce laws (Hypothesis 6b) and social attitudes towards this family type are more liberal (Hypothesis 7b).*

Following Goode's (1962, 1970, 1993) theory, it is also possible to make another argument against the declining hypothesis. This theory and some empirical studies (Härkönen and Dronkers, 2006; Chan and Halpin, 2005; Martin and Bumpass, 1989) suggest that in some countries, where divorce is rare, it is more common among the upper class, and in those where it is widespread it is more common among the lower class. It is reasonable to assume that children from lower social strata experience more financial hardship than children from upper strata when their parents divorce since: a) even if family income has to be divided after separation, children with high family financial resources before this event continue to be richer than those that were already poor before the separation, and b) taking into account that most children of these family types live with their mother, it is easier for highly educated women to enter a labour market and find jobs that pay well. Furthermore, parental education is also related to parental involvement and supervision which in turn, is also associated to children's behavioural school outcomes (Henry, 2007). These considerations led to the hypothesis that *the effect of growing up in a disrupted family is stronger in countries where mothers of these family types have a lower educational level than their counterparts in two-parent families.*

Finally, following previous hypotheses, but instead of taking one single dimension into account, it is possible to argue that the general social environment where children from disrupted families live matters. In other words, if children live in an environment with generous family policies, liberal divorce laws and attitudes towards new family types, such as the Social-Democratic countries, the effect of growing up in a disrupted family would be less marked than in other countries with rudimentary welfare states, conservative divorce laws and social attitudes, such as the Mediterranean countries (Hampden-Thompson, 2004; Kalmijn, 2009). In this regard, Breivik and Olweus (2006), in their research comparing the effect of parental divorce in Norway and the United States state: *"a fairly common view holds that children's risks of negative outcomes associated with family dissolution are generally small or even nonexistent in Scandinavia (…) (Houseknecht and Sastry, 1996; Sorensen,*

1999; Trost, 1996; Wadsby and Svedin, 1996) (p.62)". The following hypothesis is derived from this line of reasoning: *the negative effect of growing up in a disrupted family is stronger in the Mediterranean countries than in the Social-democratic ones.*

5.2.1 Empirical studies on change over time and space

Besides studies that use a cross-national approach, which were reviewed in the previous section, there are other studies that analyze the effect of family structure over time and space, but do not study school-behavioural outcomes. For this reason, research on other educational outcomes is reviewed in this section. These studies use three different strategies:

One strategy is to compare results from studies conducted during different decades. Amato and Keith's (1991b) comprehensive meta-analysis of the effect of parental divorce on children find that the effect sizes of divorce on academic achievement (standardized achievement tests, grades, teachers' ratings, or intelligence) for studies conducted in the 1980s are smaller than those for studies carried out in earlier decades. In contrast, in their meta-analytical study of adult-children (1991a) they show that the effect of parental divorce on educational attainment has not decreased over time. Furthermore, Amato (2001) demonstrates that the gap in academic achievement (standardized tests, grades, teacher's or parents' ratings of school achievement, dropping out of high school), between children with divorced and married parents decreased during the 1980s and increased again during the 1990s.

Another research strategy is to compare the effect of family type across generations. Ely et al., (1999), in their study of three British cohorts, show that the effect of family breakdown on children educational attainment has not attenuated over time. Sigle-Rushton, Hobcraft, and Kiernan (2005), comparing British cohorts born in 1958 and 1970, show the same results. Biblarz and Raftery (1999) find that the effect of family structure on children's years of education has not decreased across generations in United States. Furthermore, Deding and Hussain (2002) demonstrate that the negative effect of family break-up on years of schooling is similar in two Danish cohorts.

Another research strategy is to compare countries with different divorce rates, divorce laws, family policies, and social attitudes towards divorce. Ely et al., (2000) find that the effect of

parental divorce on children's educational attainment is not more detrimental in Scotland (which has low divorce rates) than in England (which has high divorce rates). Breivik and Olweus (2006) show that although Norway has more generous family policies than the United States, the effect of parental divorce and single motherhood on grades is similar in the two countries. Pong, Dronkers and Hampden-Thompson (2003) do not find a negative impact of growing up in a single-parent family on students' achievement in Austria (with a generous welfare state) while this effect is high in the United States and New Zealand. Furthermore, Hampden-Thompson (2009) -using the Programme for International Student Assessment data 2000- show that effect of single motherhood on test scores is higher in Social Democratic countries than on Mediterranean ones. In contrast, Esping-Andersen (2007) using the same data, find that living in a single-mother family does not have negative effects in Social Democratic countries, the United Kingdom or Spain, while there is a negative impact in the United States. Moreover, in their meta-analytical study, Chapple and Richardson (2009) find that the effect of single parenthood on children's well-being (a composite index that includes educational performance) is higher in Social-democratic countries than in Mediterranean ones. In sum, most research findings, obtained using these three different research strategies, indicate that the effect of growing up on disrupted families on educational outcomes do not diverge across countries and generations, and if it diverges, there is no clear pattern regarding how the association with family type varies between countries according to their welfare state regime.

5.3   Data and variables

This analysis is based on the PISA 2003 database organized by the *Organization for Economic Cooperation and Development* (OECD) under the project title *The OECD Programme for International Student Assessment*. This research is aimed at providing internationally comparable measurement on the performance of 15 year-old students. The database comprises data collected in 2003 in 32 countries. In this comparative study, I attempt to control for cultural influence by selecting countries that on the one hand share similar Western cultural traditions and institutions and on the other, diverge in terms of the degree of social stigma, the type of divorce laws and level of welfare generosity. I selected 17 industrialized countries: Australia, Austria, Belgium, Canada, Denmark, Finland, France,

Germany, Greece, Italy, New Zealand, Norway, Portugal, Spain, Sweden, the United Kingdom and the United States.

Including these countries provides sufficient variation between the different types of welfare states. Protestant and Catholic countries are taken into account due to the different values and norms regarding marriage and divorce, as well as the role of churches in building the welfare states. Although Eastern European countries share most of the cultural values of the countries selected, over the last two decades divorce and separation levels in Eastern European societies have undergone important changes due to the far-reaching political transformations that have taken place in these countries. In other words, the factors that explain these changes are determined by the political change that these countries experienced during the last decades. For this reason, in order to maintain certain homogeneity between the countries analyzed, I exclude the Eastern European countries from the analysis. Another reason for this selection is the data limitation, since I only have country-level variables for the countries selected.

The PISA 2003 has some strengths and some weakness. The main strength of the survey is its cross-national comparability. Another advantage is that it has information on both cognitive and behavioural outcomes. However, a weakness of the PISA 2003 is the cross-sectional nature of the data collected. It is a snapshot of 15-year-old students: there is no information about either the children's further development or about their earlier experiences and outcomes available (Garib, Martin Garcia and Dronkers, 2007). Another limitation is that there is information about several family types, but the causes of current family forms are unknown. Single-mother families or mother and stepfather families may be due to divorce or separation, to the death of a parent or the parents never having lived together. Furthermore, the most recent PISA survey, the PISA 2006, contains no information about family structures. For this reason, PISA 2003 is used in this chapter.

In addition to the original variables, the PISA researchers created a number of aggregate indicators, based on the answers of pupils. Information on these indices and their reliability can be found in the Manual for the PISA 2003 Database (Organization for Economic Cooperation and Development, 2005) and the PISA 2003 Technical Report (OECD, 2005),

both available on the OECD web page. Like other researchers, I decide to use these broadly accepted measures rather than developing my own (potentially more contestable) indicators.

As mentioned, the dependent variable of interest is arriving late for school. The child was asked "In the last two full weeks you were in school, how many times did you arrive late for school?" There are four categories: a) None; b) 1 or 2 times; c) 3 or 4 times; d) 4- 5 or more times. For this reason, Willms (2003) considers that only the fact of arriving late for school three or more times is an indicator of low participation. It is reasonable to assume that arriving late for school only once or two times in two weeks does not indicate systematic misbehaviour. Over two weeks, a student may arrive late twice due to justified reasons such as medical appointments. In addition, Kearney (2008a) also argues that assessing tardiness during a two-week period enables the exclusion of non-problematic tardiness. For these reasons, all the categories are dichotomised into 1- 3 or more times, and 0- none or 1 or 2 times.

The single mother and mother and stepfather variable is constructed from the child's response to the questionnaire item that asks them to indicate who they live with. There are four possibilities, and for each one, the student has to indicate whether this applies to him/her: mother and stepfather (e g, mother and stepfather or foster mother), father, stepfather (e.g. stepfather of foster father) and others (e.g. brother, sister, cousin, grandparents). Three family structure variables are created from this information, the single-mother family (children saying that they only live with their mother and no other stepparent/guardian), the two-parent family (children saying that they live with both their mother and father) and the mother and stepfather family (children saying that they live with their mother and stepfather or other stepfather). In this chapter, two types of disrupted families are used: the single-mother family and the mother and stepfather family, because there are several reasons for considering that children in step father families would have less risk of arriving late to school than children in single-mother families. First, if a single mother remarries, this usually results in improvements in the family's financial status (Amato and Keith 1991a). Furthermore, because stepparent families have two adults that share financial and care responsibilities, these families have more time available to parent than do single mother families (Sigle-Rushton and McLanahan, 2004).

The control variables and the other independent variables are the same as those in the previous chapter, i.e. sex, immigrant status, mother's and father's educational level, mother's occupational level, mother's type of work, home possessions and cultural resources and attendance at pre-primary school education.

In the second step, the moderating role of country characteristics on the effect of family structure on arriving late for school is analyzed. All variables at the country level have been mean centered. Using PISA 2003, I computed the *Percentage of Children from Disrupted Families* by counting all children in a country growing up in a family other than a two-parent family *(*mother and stepfather and single-mother families*)*. Moreover, in order to take into account Goode's explanation, I calculated the mean mother's education from two-parent families and the mean mother's education from disrupted families by country. The difference is then calculated by subtracting the two-parent family from the disrupted family mean. Attitudes towards new family types are measured by the proportion of respondents in the World Values Survey (1999/2000) who do not agree that child needs a home with both a father and a mother to grow up happily.

Strictness of divorce legislation is measured with a three-level categorical variable, based on the classifications used by Glendon (1987), Castles and Flood (1993) and Härkönen and Dronkers (2006):

     1.   Divorce by mutual consent is not adopted, or more than 3 years of marriage are required in order to obtain it. The aim of the divorce law is to discourage divorce under any circumstances, since the institutionalization of marriage remains its essential principle.

     2.   Divorce is permitted on the grounds of fault, mutual consent of the spouses or other indications of an actual breakdown of the marriage, and the separation period for a mutual consent divorce is less than 3 years. The law shows more understanding for the will of the spouses.

     3.   Unilateral no-fault divorce is granted on the basis of the will of either spouse with very short waiting or 'reconsideration' times or separation periods of less than one year.

Data on divorce laws have been collected from Goode (1993), Friedberg (1998), Hamilton and Perry (2002), European Commission (2009) and Boele-Woelki, Braat and Summer (2003). In some cases, classifying a country into one of these categories is not very

straightforward. The USA is the most difficult, because each state has its individual legislation and the PISA data does not enable a distinction to be made for each state. The USA is therefore treated as a single case. Following Härkönen and Dronkers, (2006), the USA is classified in the third group, since divorce tourism between the states is possible (Castles and Flood, 1993). Other countries are also difficult to classify. New Zealand can be considered in the third and the second category, and Spain in the third and in the first. New Zealand and Spain[32] are included in the second category. However, analyses using different classifications are performed, and the results obtained are similar.

Several measures for welfare-state generosity related to parental time are used. *Duration of maternity/parental leave* and *Maternity/parental leave benefits* (expressed as a percentage of women's wages in manufacturing, are measured in 1987, since this is the year of birth of most children in this survey. This data is collected from the Family Policy Project database of the University of Calgary. On the one hand, using PISA 2003, I calculated the *percentage of mothers in disrupted families working part-time*. Family support through childcare facilities is measured by the *Public spending on child care*, which includes all public financial support (in cash) for families with children participating in formal day-care services (e.g. crèches, day care centres and family day care for children under 3 in percentage of GDP (OECD, 2008).

In addition to using single policy indicators, I also employ a composite index of three kinds of policy areas related to the parental time of single mothers: care-giving policies, paid-work policies, transitional policies. Each of these variables are indices constructed by Kilkey (2000) and modified by Hampden-Thompson (2004)[33]. The index of care-giving policies captures whether a particular country supports single mothers that choose to stay at home in order to take care of their children, without forcing them to enter the labour market. The paid worker index measures if the policy environment allows single mothers to spend time with their children and to maintain their job by helping them to balance work and family life. The transitional index is concerned with policies that facilitate a single mother's transition from

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[32] The classification of Spain is based on the divorce law of 1981, since the new law was adopted in 2005, and the PISA data used is from the survey PISA 2003.

[33] A fuller explanation of the construction of these indices can be found in Kidley's book (2000) *Single mother between paid work and care* (Kilkey,2000) and Hampden-Thompson (2004) dissertation *Social policy, family structure and children's educational achievement: a comparative study*. Hampden-Thompson (2004) used these variables in order to see if they explain the effect of single motherhood on test scores, using data from the PISA 2000. For this reason, I consider that they can be used in this study with the PISA 2003. These variables were created using the Social Policy Research Unit's (SPRU) database at the University of York, England

paid worker to caregiver. For example, if a mother chooses to care for her newborn child and give up her job, how generous is the state in helping her transition from the role of paid worker to that of caregiver (Hampden-Thompson, 2004)?.

The care-giving standardized index for a single-mother with school-aged children is calculated based on six policy components: the duration of the right to time to care, the value of payments for care, the net value of other cash transfers, and the availability of caring credits or non-contributory and non-means-tested benefits within the social security system, an absolute right to time to care and resource unit in 'care benefit' (Hampden-Thompson, 2004). The paid work index for a single mother with school aged children is based on twenty components. Some of these components are maternity leave, parental leave, annual leave for family reasons, formal childcare provisions, scheduling of public Education Policy Department Provisions for part-time employment, cash/service transfers to employed single mothers, direct income tax and social/health insurance contributions (Hampden-Thompson, 2004). The transitional index consists of three components: the replacement rate of benefit income, the duration of the right to time to care, and whether the right to time to care is absolute (Hampden-Thompson, 2004).

Family support through economic assistance, i.e. policies concerning the additional costs of having children, is measured as public spending on family benefits as a percentage of GDP in 2003 (OECD, 2008). This financial public support is exclusively for families. It includes child allowances, with payment levels that in some countries vary with the age of the child, and are sometimes income-tested; public income support payments during periods of parental leave, (in some countries), and public childcare support through assigned payments to parents (OECD Family Database, 2008). However, this variable does not take into account how family policies treat two-parent and single-parent families.

Hampden-Thompson (2004)[34] has also created two variables that measure the income gap between single-parent and two-parent families in several countries: 1) the economic policy

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[34]A fuller explanation of the construction of these variables can be found in Hampden-Thompson (2004) dissertation *Social policy, family structure and children's educational achievement: a comparative study*. Hampden-Thompson (2004) used these variables in order to see if they explain the effect of single motherhood on test scores, using data from the PISA 2000. For this reason, I consider that it can be used in this study with the PISA 2003.These variables were created using the Social Policy Research Unit's (SPRU) database at the University of York, England.

environment that favours single-parent families in low income groups and 2) the economic policy environment that favours single-parent families in the average income group. Instead of evaluating the impact of a single economic policy, these variables measure the impact of an economic policy environment on single parents, i.e. whether family policies in a country favour single-parent families instead of two-parent families. She uses the model families approach (see Kamerman and Kahn, 1989, 1978) to examine the impact of family policy on single parents.

She created these variables by taking the following steps. She used the data for two model families: a two-parent family with two children aged 14 and 7 years, and a single parent with two children aged 14 and 7 years. Six different income types were then used for these two family types: no earners, receiving social assistance; one earner working 16 hours per week for the minimum wage of each country; one earner, half national male earnings; one earner, half national female earnings; one earner, average national male earnings; and, one earner, average national female earnings. These earnings levels were then combined into two groups: low-income families (social assistance, minimum wage, half national male and half national female) and average-income families (average national male and average national female). Each type of national gross earnings levels was calculated for each of the 17 countries. Various benefits, taxes, and services were then added or deducted depending on the number of children in the family: income tax benefits; social security contributions; income-related child benefits; non income-tested child cash benefits; rent benefits; local taxes; childcare costs; school/costs/benefits; health costs; and guaranteed child support. In addition, the currency for each country was converted into United States purchasing power parities (ppp's) in order to enable cross-national comparisons. Finally, the gap in the net disposable incomes between two- and single-parent families (two-parent disposable income - single-parent disposable income) was calculated. A positive $ amount indicates that after adjustment for all taxes, benefits, and services, a single parent is better off at the end of the month than his/her two-parent family counterpart. By contrast, a negative amount indicates that the single-parent family fares worse financially.

Besides, another indicator in order to capture the economic differences between disrupted and two-parent families is the gap in home possessions between family types for country. This indicator is calculated using the PISA 2003. I calculated the mean of home possessions for

disrupted families by country and the mean of home possessions for two-parent families by country. The difference is then calculated by subtracting the two-parent family from the disrupted one. The main difference between the economic policy environment variables and the home possessions variable is that the former measure the income gap, and the later the gap in material possessions at home, such as having a computer or an Internet connection. Although economic policy environment variables and home possessions should be highly correlated, these might measure different dimensions of family deprivation. The gap in home possessions by country is also calculated using PISA micro-level data, while economic policy environment variables are calculated directly, using macro-level information.

Finally, instead of evaluating the impact of only one macro-level indicator related to one single explanation, my aim is to analyze the overall environment of four clusters of countries. Following the Esping-Andersen (1990) classification of welfare capitalism, I make a distinction between Social-democratic, Liberal and Conservative countries. However, according to Ferrera (1996), I differentiate between the Conservative countries and Mediterranean countries. The Social-democratic countries includes Denmark, Finland, Sweden and Norway. The Liberal countries are United Kingdom, United States, New Zealand, Australia and Canada. The Conservative countries are France, Germany, Austria and Belgium. The Mediterranean countries are Portugal, Spain, Italy and Greece.

5.4   Sample size and analytical technique

There are 132,726 cases in the original sample. As mentioned above, I only include in the sample those children living with two biological parents (91,776), only with their mother (20,235) and with their mother and stepfather (6,970). Taking into account all these restrictions, the sample size is 118,981 cases. After excluding missing cases of the dependent and independent variables, the final sample has 115,690 cases; less than 3% of cases of the original sample are lost. In this chapter, the PISA sample is not weighted since as Winship and Radbill (1993) suggest, it is not necessary to weight it if one controls for the variables that have been used to construct the weights.

The main aim of this paper is to test whether country characteristics moderate the relationship between family structure and arriving late for school. Because cross-level interaction effects are hypothesized, multilevel analysis techniques are applied in this study with two levels: the student and the country level (Snijders and Bosker 1999). Multilevel Modelling is also appropriate for such an analysis due to the nested structure of the PISA data. The students in this study are part of a hierarchical social structure in which these 15-year-olds are nested within countries (Hampden-Thompson, 2004). People within hierarchies tend to be more similar to each other than if the entire population were randomly sampled (Hampden-Thompson, 2004). In other words, students in the same country share observed and unobserved macro-level characteristics. This homogeneity violates the assumptions of most analytical techniques since these assume that observations should be fully independent. In ordinary least squares regression (OLS) or logistic regression, for example, this violation results in small standard errors that result in the reporting of significance where none exists. For these reasons, and due to my dependent variable, which has two categories, multilevel ordinary logistic regression is performed using HLM 6.08 software (Snijders and Bosker, 1999).

The multilevel model will contain two levels[35]; the first level is the student-level and at the second level is the country-level. Independent variables in the student-level include family structure and control variables of the first level. At the second level, country level variables are entered as independent variables. The general model is specified below.

Student-level equation:

Logit (Late for school)$_{ij}$ = β_{j0} + β_{j1}(Family structure variables)$_{ij}$ + β_{j2}(Control variables)$_{ij}$

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[35] Although the PISA data 2003 has three levels (student, school and country level) I have not included the school level in the analyses because my theoretical questions focus on the country level. However, I have checked if the results presented in this chapter change when the residual variance at the school level is introduced in the models. Similar results without any substantial variation have been obtained including or excluding the variance at the school level. In addition, I consider that a study of the moderating role of the school variables on the effect of family structure on arriving late for school is so rich and interesting that it would entail writing another separate chapter. For these reasons, I have not studied this topic in this dissertation, but currently I am writing a paper on this issue.

Country-level equations:

$$\text{Equation 1: } \beta_{j0} = \gamma_{00} + \gamma_{01}(\text{country variables})_j + U_{j0,}$$

$$\text{Equation 2: } \beta_{j1} = \gamma_{10} + \gamma_{11}(\text{country variables})_j$$

$$\text{Equation 3: } \beta_{j2} = \gamma_{20}$$

Student i is nested within country j. The β's are the level one coefficients (student level), the γ's are the level two coefficients (country level). In the student-level equation, β_{j1} and β_{j2} represent the main variable of interest in this study (family structure). β_{j3} represents the coefficients for the control variables at individual level.

At the country level, Equation 1 indicates that the intercepts from student level (β_{j0}) are modelled as a function of variables at the country level with a random effect (U_{j0}) which is the residual variance at the country level. It has been hypothesized that the effect of family structure might be moderated by country characteristics. For this reason, the coefficient of family structure variables from student level (β_{j1}) is modelled as a function of country level variables. My primary interest in this chapter is therefore to estimate $\gamma_{11.}$

By substituting country level equations 1, 2 and 3 into the student level equation, one obtains:

$$\text{Logit (Late for school)}_{ij} = \gamma_{00} + \gamma_{10} (\text{Family structure variables })_{ij} + \gamma_{20} (\text{Control variables})_{ij} + \gamma_{01}(\text{country variables})_j + \gamma_{11}(\text{Family structure variables * country variables })_j + U_{j0}$$

The first part of the equation $\gamma_{00} + \gamma_{10}$ (Family structure $)_{ij} + \gamma_{20}$ (Controls variables) $_{ij} + \gamma_{01}$(country variables) $_j + \gamma_{11}$(Family structure * country variables) is called the fixed part of the model. γ_{00} is the average intercept and γ_{10}, γ_{20} and γ_{01} are the average regression coefficients of the predictors. $\gamma_{11}$is the coefficient of the interaction between family structure variables and country level variables. This is a cross-level interaction. The rest of the model (U_{j0}) is the random part.

5.5 Results

Are children in Social Democratic countries at less risk of arriving late for school than their counterparts in other countries? It was hypothesized that the effect of family structure on arriving late for school is lower in Social Democratic countries than in Liberal, Continental or Mediterranean ones since the former have a more favourable environment for children growing up in disrupted family types. But do Social Democratic countries really offer the best social conditions for these children? As expected, Table 2 shows that with the exception of Norway, Social Democratic countries and Liberal ones have the lowest percentage of respondents that do not agree with the statement that a child needs a father and a mother in order to grow up happily. Attitudes towards new family types are therefore more liberal in these countries than in others, with the exception of Portugal. Furthermore, on average the percentage of children living in disrupted families is also higher in Social Democratic and Liberal countries than in the other states. Additionally, all Social Democratic and some Liberal countries such as Canada, Australia and United States have adopted unilateral non fault divorce laws. Divorce legislation therefore is more liberal in these countries than in other western countries. The percentage of GDP that is spent on family benefits is higher in Social Democratic and Conservative countries than in Mediterranean and Liberal states. Parental leave benefits are also higher in the former country groups than in the latter. However, the number of weeks of parental leave (duration of parental leave) and the percentage of GDP that is spent on childcare is higher in Social Democratic countries than in the rest.

Turning to policy environment indicators, Table 2 shows parental time policy environment indices. These range from a low of -100 to a high of 100, therefore, a score of 100 indicates that a country scored high on a particular index. The United Kingdom (100) is the country that is most orientated towards supporting single mothers as caregivers. Other countries with a generous policy environment for single mothers as caregivers are Australia, Denmark, Finland, Norway, Austria and Germany. Sweden is the state that provides the most support for single mothers as paid workers (100). Scores on the index for this policy parental time environment are also high in Belgium, Norway, Denmark, Finland and Spain. Some countries have a high index score for one indicator, but a low score for the other one. However, Social Democratic countries have high scores in both indexes. These countries are more generous in

their support for single mothers, whether they are paid workers or caregivers, than other welfare regimes. In contrast, there are high index scores for the transition from paid worker to caregiving only in Finland and the Liberal countries.

Table 2 also shows economic policy environment variables. In nine of these countries, low-income single-parent families have more disposable income after deductions than their two-parent family equivalents. In Austria, Norway and Demark, income gaps strongly favour low-income single-parent families. The opposite is true for the United States, Sweden and Portugal where low-income two-parent families are substantially better off. For the average income category, single parents are financially better in 10 of the 18 countries, with the most outstanding examples being Austria, Norway, Finland, Sweden and the United States. When welfare regimes are taken into account, the regime where single parents are financially best off than two-parent families is the Social Democratic regime, while where they are worst off is in the Mediterranean regime.

In short, single indicators of family policies or policy indexes show that the welfare state in Social Democratic countries is more generous than in other welfare regimes. Consequently, the gap in home possessions between disrupted and two-parent families should be lower in Social Democratic countries than in other western democracies. However, contrary to expectations, it is higher in Sweden (-0.35), Finland (-0.29) and Denmark (-0.29) than in other countries such as Greece (-0.9) or Austria (-0.14). A comparison of welfare regimes shows that the Liberal (-0.29) and the Social Democratic regimes (-0.29) have the highest gap, while the Mediterranean regime (-0.15) has the lowest.

These differences between countries may be due to the fact that in Liberal and Social Democratic countries, mothers from disrupted families have a lower educational level than their counterparts in two-parent families, while in Mediterranean states the latter are worse educated than the former. The gap in mother's education is positive in the Mediterranean countries (0.14), while it is negative in the Social Democratic (-0.10) and the Liberal countries (-0.16). Furthermore, it must be emphasized that the correlation between the gap in the mother's educational level and the gap in home possessions is positive and its magnitude is very high since it is almost 0.7. This indicates that the gap in home possessions increases when mothers in two-parent families are better educated than mothers in disrupted families.

These latter findings are unexpected, and might challenge the assumption that Social Democratic countries offer the most favourable context for children growing up in disrupted family types. However, further studies using different economic indicators should confirm this result.

The first model of the multilevel analyses is the unconditional model (Table 3). This model shows that the residual variance at country level (VA) is 0.19 and it is significant. By using it, the intraclass correlation can be calculated[36], which is an indicator of the relative importance of context in this case, the country in which the student lives and goes to school. The intraclass correlation is a modest 0.05, which indicates that there are some inter-country differences, but that these differences are not really high. However, it does not imply a major challenge to our analyses, since the main goal of this dissertation is to ascertain whether the interactions between family structure and variables at country level are significant or not[37].

Model 2 and 3 in Table 3 show that children in single-mother and mother and stepfather families have more risk of arriving late for school than their counterparts in two-parent families, also after controlling for several individual and family characteristics. However, it is important to note that the effect of growing up in a single-mother family is greater than the effect of growing up in mother and stepparent families. This finding is not surprising, given the fact that these families have much higher incomes and more time available to parent than single mother families have. However, other studies have shown that children living in stepparent families often fare just as badly as children living in single-mother families (Thomson, Hanson and McLanahan, 1994, McLanahan and Sandefur, 1994).

But do these effects differ by welfare regimes? Model 4 of Table 3 shows that the interactions between single-mother families and Liberal and Conservative countries are not significant. Children from single-mother families in these countries therefore have the same risk of

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[36] Chaix et al., (2004) argue that it is widely known that problems of statistical consistency exist to define the intraclass correlation coefficient (ICCC) for multilevel logistic models, because the variance and the mean are linked, and the area-level variance is measured on the logistic scale. Several methods have been suggested to compute the intraclass correlation coefficient. Hox (2002) and Snijders and Bosker (1999) recommend using the following formula to compute the intra class correlation coefficient:

$$ICCC =: VA/ (VA + (\pi\ 2/3).$$

[37] It is possible to argue that due to the low intraclass correlation, it would be not necessary to perform a multilevel model, and performing a logistic regression model with country dummy variables would be enough. However, a normal logistic regression model would have around 40 variable since it would contain 23 variables at individual level and 16 dummy variables. This model would have too much variables to perform the analyses. For this reason, and due to the fact that residual variance at country level is significant, I have considered that the best technique for this kind of study is the multilevel analysis.

arriving late for school as their counterparts in Social Democratic countries (b=-0.19). However, the interaction between single-mother families and Mediterranean countries is significant. The effect of growing up with a single mother is greater in Social Democratic countries (0.38) than in Mediterranean (0.19) ones. Moreover, for children in mother and stepfather families, there are no differences by groups of countries. Contrary to expectations, Model 1 therefore shows that the effect of growing up in a disrupted family is not lower in Social Democratic countries than in other western countries, even if the former have a higher percentage of disrupted family structures, more Liberal social attitudes and divorce laws and a more generous welfare state than the later.

The goal of the next step of my research is to identify which macro-level mechanisms mediate the association between family structure and the risk of arriving late for school. The macro-level indicators are included one by one, because adding all macro-level factors would require more degrees of freedom than those available at country level.

It was hypothesized that welfare state generosity would reduce the effect of growing up in a disrupted family on arriving late for school. Various single indicators of family policies are included in model 1 to model 5 in Table 4. Model 1 shows that only the interaction between parental leave duration and a mother and stepfather family is significant and positive (b= 0.01)[38]. However, the direction of the interaction is not as expected, since the effect for mother and stepfather families is higher (b= 0.62) in countries with a long duration of parental leave while it is lower (b= 0.11) in countries without this policy. Model 2 shows that only the interaction between parental leave benefits[39] and single mother families is significant (b=-0.01) and negative (expected direction). This result indicates that in countries where parents receive 100% of their earnings during their parental leave, the effect of growing up in a single-mother family is -0.01, while it is 0.98 in countries where parental leave is non-existent. Model 3, 4 and 5 show that the interactions between family structure and public spending on family benefits, public spending on childcare, and the percentage of mothers from disrupted families in part time jobs are not significant. Taking into account these results,

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[38]This effect is calculated as follows: Table 4 shows that the effect of the interaction variable between a mother and stepfather family and parental leave duration is 0.01. The minimum and maximum values of this variable after mean-centering are: minimum-17.08 and maximum=33.92. I multiply the effect of 0.01 by -64.79 and 35.21 and I add the average effect of a mother and stepfather family, 0.28. The formula is: main effect + interaction term * minimum/maximum resources variable.

[39]The minimum and maximum values of paid parental leave after mean-centering are: minimum -64.79 and maximum=35.21.

it is therefore possible to argue that contrary to the hypothesis, welfare state generosity does not reduce the positive effects of growing up in a disrupted family on arriving late for school, with the exception of parental leave benefits.

Similar results are found when indices of parental time policy environments are included in the model instead of single policy indicators. Model 1 in Table 5 shows that the interactions between the caregiver index[40] and variables of family structure are both significant (b= 0.001) but positive, which means that the impact of growing up in a single-mother family (b= 0.41) is higher in countries with the highest score on the caregiver index than in countries with the lowest one (b=0.22). The effect of growing up in a mother and stepfather family is also higher in the former group of countries (b=0.33) than in the later (b=0.14)

Model 2 shows that the interactions between the paid worker index and variables of family structure are not significant. The risk of arriving late for school for children from disrupted families is therefore the same in countries that give strong support to single mothers to balance work and family life as in other countries where mothers from these family types receive weak support. Finally, the third model is concerned with the policy environment for single mothers as they make the transition from paid workers to caregivers[41]. The interaction between single-mother families and this index is significant (b=0.001) but again the sign is not as expected. In countries with the best policies to help single mothers make the transition from the role of worker to caregiver, the effect of growing up in a single-mother family (b= 0.41) is higher than in countries with the worst policies (b=0.28). The interaction between the mother and stepfather family and this index is not significant.

Model 4 of Table 5 contains the economic policy environment variable favouring low-income single-parent families. The cross-level interactions between this variable and the single-mother family and the mother and stepfather family are not significant. This indicates that the risk of arriving late for school for children in disrupted families is not related to this particular economic policy environment. Model 5 contains the economic policy environment variable

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[40] The minimum and maximum values of the care-giver index after mean-centering are: minimum -121.41 and maximum=69.59.

[41] The minim and maximum values of transition from paid workers to caregivers after mean-centering are: minimum -55.11 and maximum=76.89.

favouring average-income[42] single-parent families. In this case, the cross-level interaction between the single-mother variable and the economic policy environment variable favouring average-income single-parent families is significant (b=0.00), but the direction of the interaction is not as anticipated, since the effect of growing up in a single-mother family is higher (b=0.90) in countries where the income gap favour single-parent families than in countries where the income gap favours two-parent families (b=0.31). Furthermore, the interaction between growing up in a mother and stepfather family and average-income variable is not significant.

In short, similar findings are obtained using single indicators that measure welfare generosity for all family types or policy indexes: welfare state generosity does not reduce the risk of arriving late for school for children in disrupted families, with the exception of benefits of parental leave.

Model 6 of Table 5 shows cross-level interactions between family structure and differences on home possessions[43] between disrupted and two-parent families. The interactions between single mother families (b=-0.90), mother and stepfather families (b=-1.63) and this macro-level factor are both significant and in the expected direction. In countries with the lowest gap, children of single-mother families (b=0.20) have less risk of arriving late for school than their counterparts living in countries with the highest gap (b=0.44). In addition, the impact of growing up in a mother and stepfather family in the former group of countries is -0.02, while it is 0.42 in the later. It is necessary to note that on the one hand, the sign of the interaction between home possessions and family structure is in the opposite direction to the significant interactions between family structure and welfare state generosity variables, with the exception of paid parental leave.

It was hypothesized that in countries with a high percentage of divorce, liberal attitudes and divorce laws, children from disrupted families should have less risk of arriving late for school than their counterparts in more conservative nations. However, the results of Table 6 do not confirm these hypotheses. Model 1 shows that the interaction between attitudes towards

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[42] The minimum and maximum values of average income after mean-centering are: minimum -228.02 and maximum=565.58.
[43] The minimum and maximum values of the gap home possessions after mean-centering are: minimum -11 and maximum=16.

disrupted family structures the proportion of respondents who disagreed that a child needs a home with both a father and a mother to grow up happily - [44]and family structure is significant (b=0.01). However, I find that the effect does not have the expected sign: since in countries with the most favourable attitudes towards disrupted families, the negative effect of growing up in a single-mother family is 0.52, while it is only 0.16 in countries with the most conservative attitudes. The impact of living in a mother and stepfather family is also 0.41 in the former group of countries, and 0.05 in the later.

According to Model 2, the interaction between a single mother and the percentage of disrupted families[45] in a country is significant (b=0.01) while the interaction between a mother and stepfather family and this macro-level variable is not significant. However, the sign of the interaction is not the expected: in countries with the lowest percentage of disrupted family structures, the effect of growing up in a single-mother family is 0.20 while it is 0.48 in countries with the highest percentage.

Turning to the strictness of divorce laws, the estimates in Model 3 do not support the hypothesis that the association between family structure and arriving late for school is weaker when divorce laws are more liberal, since the interaction between single-mother family and countries with moderate (b=-0.21) and restrictive (b=-0.12) divorce laws are significant and negative. The effect of growing up in a single-mother family is therefore higher in countries with liberal divorce laws (b=0.42) than in countries with moderate (b=0.21) or restrictive (b=0.30) legislation. Furthermore, the interaction between a mother and stepfather family and restrictive divorce laws (b=-0.15) is also significant and negative, which means that in countries with restrictive divorce laws, children from mother and stepfather families have less risk (b=0.20) of arriving late for school than their counterparts in societies with liberal divorce laws (b=0.35).

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[44] The minim and maximum values of percentage of liberal attitudes after mean-centering are: minimum -17.83 and maximum=18.16.

[45] The minimum and maximum values of the percentage of disrupted families after mean-centering are: minimum -13.83 and maximum=14.17

Meanwhile, the interaction between single-mother families and the differences in the mother's education[46] is significant and negative (b=-0.60). The interaction between this macro-level variable and mother and stepfather families is also significant and negative, but the later is so at the 10 percent level (b=-0.66). In countries, where mothers from disrupted families are better educated than mothers in two-parent families, the effect of growing up in a single-mother family is 0.14, while it is 0.42 in countries where mothers in disrupted families are less well educated than mothers in two-parent families. Furthermore, the impact of living in a mother and stepfather family is only 0.05 in the former group of countries, and 0.34 in the later.

Why is the effect of living in disrupted families higher in countries with a high percentage of these family types, generous family policies, a high gap in home possessions and liberal attitudes and divorce laws? On the one hand, Model 4 in Table 6 shows that the interaction between the gap in the mother's education and the single-mother family variable is significant and negative (b=-0.60), as is the interaction between this macro-level variable and the mother and stepfather family (b=-0.66). In countries where mothers in disrupted families are better educated than mothers in two-parent families, the effect of growing up in a single-mother family is 0.14 while it is 0.41 in countries where single mothers are less well educated than mothers in two-parent families. By the same token the impact of living in a mother and stepfather family is only 0.05 in the former group of countries, and 0.34 in the later. Meanwhile, the gap in the mother's education is negatively correlated to attitudes and the percentage of disrupted families, and most of the indicators of welfare state generosity (see appendix). As stated above, this is positively correlated to the gap in home possessions. It indicates that in countries where mothers from two-parent families are better educated than mothers in disrupted families, family policies are more generous, attitudes are more liberal, the percentage of disrupted families is higher and the gap in home possessions is greater than in countries where mothers in disrupted families are better educated than mothers in two-parent families. These findings might explain why the interactions between welfare state generosity, divorce laws and attitudes and family structure do not go in the expected direction.

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[46] The minimum and maximum values of the gap in the mother's education after mean-centering are: minimum -16 and maximum=28.

Finally, multivariate analyses are performed in Table 7 and Table 8 in order to confirm the importance of the gap in mother's education, which include this variable and the other macro-level variables that have been significant in the bivariate analyses. The results show that when the interaction between single-mother families and the gap in mother's education is added, the interaction between single-mother families and indicators of welfare generosity, the percentage of disrupted families, divorce laws and attitudes to disrupted families are no longer significant. In contrast, the interaction between the gap in the mother's education and single-mother families remains significant in all models. A possible explanation of this finding might be that if mothers in disrupted families in a country are better educated than mother's in two-parent families, the negative event of single motherhood is affecting the group of families that already have more resources. These families are therefore in a better position than others in order to overcome the negative effects of single motherhood. In contrast, if in a society mother's in disrupted families are less educated than mothers in two-parent families; it implies that the negative event of single motherhood happens in the group of families of the society that have the worst conditions in order to face the negative consequences of this event. It could explain why the variable gap in the mother's education is the most important variable of the previous analyses in order to moderate the effect of single mother families on arriving late at school. However, this variable also might capture other characteristics of the society that I have been unable to measure. For example, in most Mediterranean countries, mothers in disrupted families are better educated than mothers in two-parent families and in these countries, the extended family is also very important and this may help to reduce the negative effects of single motherhood. Future studies should test alternative explanations of the moderating role of the gap in the mother's education

Tables 7 and 8 show that the interaction between the mother and stepfather family variable and the gap in the mother's education also remains significant when interactions between this family type and macro-level variables, such as percentage of disrupted families, average income and paid parental leave, are included in the models. However, in these models the interactions between these variables and the mother and stepfather family variable are not significant. On the contrary, the interaction between the gap in mother's education and the mother and stepfather family variable is no longer significant when interactions between this family type and the gap in home possessions, attitudes, caregiver index and transition time policies are included in the models. However, the interactions between these variables and

the mother and stepfather family variable are also not significant, with the exception of the interaction with attitudes towards disrupted families. Model 6 shows that attitudes towards disrupted families are more important in moderating the effect of growing up in mother and stepfather families than the gap in the mother's education. It therefore seems that for children in single-mother families, the most important macro-level indicator is the gap in the mother's education, while for children in mother and stepfather families the most relevant macro-level indicator is attitudes towards disrupted families.

5.6   Concluding discussion

The main question in this study is whether the effect of growing up in a disrupted family declines when children live in a favourable social context for disrupted families. It was hypothesized that Social Democratic countries have the most favourable context for children for new family types. Some descriptive results confirm this hypothesis, since I find that these countries have a high percentage of disrupted families, a generous welfare state and liberal attitudes and divorce laws. Nevertheless, other descriptive results might challenge this assumption. I find that the gap in home possessions between two-parent and disrupted families is higher in Social Democratic countries than in others, such as the Mediterranean countries. A possible explanation for this finding is that this gap is lower in countries where mothers in disrupted families are better educated than mothers in two-parent families, such as Mediterranean countries, and it is higher in countries where mothers in two-parent families are better educated than mothers in disrupted families, such as Social Democratic countries. This could suggest that differences in the mother's education may be more important than welfare state generosity in explaining the gap in home possessions.

In addition, I have also hypothesized that in Social Democratic countries the effect of growing up in a disrupted family on arriving late for school should be lower than in other countries. Multilevel analysis does not support this hypothesis. The effect of growing up in a single mother family is the same in Liberal and Conservative countries as it is in Social Democratic ones. Furthermore, in this latter group of countries, children growing up in a single-mother family have less risk of arriving late for school than their counterparts in Mediterranean countries. Moreover, the effect of growing up in a mother and stepfather family is the same in these four different welfare regimes. These results are in accordance

with previous comparative studies such as those by Hampden-Thompson (2009) and Chapple and Richardson (2009).

Moreover, another research question was to elucidate which macro-level factors mediate the association between family structure and the risk of arriving late for school. I find no evidence that welfare generosity, with the exception of paid parental leave, reduces the effects of living in disrupted family structure. Other studies have shown that some measures of welfare generosity used in this study reduce the effect of family structure on test scores[47]. This could suggest that family policies might have different effects depending on the outcome examined. However, other non-cognitive school outcomes should be studied in order to confirm this hypothesis.

The interactions between family structure variables and divorce laws, the percentage of disrupted families and attitudes towards new family types have the opposite effect to the predictions. When divorce laws and social attitudes are more liberal and disrupted families are more common, the effect of living in a disrupted family on arriving late for school is greater. Pong, Dronkers and Hampden-Thomspon (2003) and Garib, Martin Garcia and Dronkers (2007) also found that the effect of coming from a single-parent family on test scores is greater in countries with a high percentage of single mothers.

Furthermore, I find support for the hypothesis derived from Goode's theory that in countries where mothers from disrupted families are better educated than mothers of two parent families, the risk for children growing up in a single-mother family of arriving late for school is lower than in countries where single mothers are less educated than mothers in two-parent families. Previous studies have not taken into account the mother's education gap, and this is one of the main contributions of this study.

Moreover, multivariate analyses have shown that the most important macro-level indicator in explaining the effect of growing up in a mother and stepfather family is attitudes towards

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[47] De Lange, Dronkers and Woldbers (2008) showed that the negative effect of growing up with a single mother is reduced in countries with ample policies for the support of families through childcare. Pong, Dronkers and Hampden-Thompson (2003) and Garib, Martin Garcia and Dronkers (2007) found that duration of parental leave reduces the effect of growing up in a disrupted family on test scores. Hampden-Thompson, (2004) demonstrated that the effect of growing up in a single-mother family on test scores is lower in countries with a policy environment that supports single mothers as paid workers and favours low-income single-parent families

disrupted families. In contrast, the macro-level indicator that is most relevant in explaining the effect of growing up on a single-mother family is the gap in the mother's education. The later finding should be taken into consideration by policymakers since on the one hand, research has demonstrated that in some countries, when the percentage of children in disrupted family structures increases, mothers in disrupted families have a lower educational level than mothers in two-parent families (Härkönen and Dronkers, 2006; Chan and Halpin, 2005; Martin and Bumpass, 1989); on the other, if other studies confirm the moderating role of the gap in the mother's education on the family structure effect, it would be possible that the negative effect of living in a single mother family may also increase in some countries.

However, the results presented here should be interpreted with caution due to the limited number of cases at country level, and the fact that they need to be replicated in other studies with different dependent variables. Nevertheless, further studies on the macro-level explanation of the effect of growing up in a disrupted family on children well-being should consider the country gap in the mother's education between disrupted and two-parent families.

5.7   References

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5.8 Tables

Table 1. Macro-level variables.

	Percentage that do not agree that: child need father and mother	Percentage Disrupted families	Divorce Laws	Public spending on family benefits % GDP	Duration Parental leave (weeks)	Benefits parental leave	Public Spending on Child Care % GDP	Percentage mother's disrupted families part time job
Australia	29.3	25.8	Liberal	2.2	0.0	0.0	0.18	23.0
Canada	28.4	23.1	Liberal	0.9	15.0	60.0	0.03	15.5
New Zealand	22.7	26.2	Moderate	1.9	0.0	0.0	0.08	23.1
United Kingdom	29.53	26.8	Moderate	2.2	18.0	29.0	0.37	25.1
United States	35.6	36.8	Liberal	0.1	0.0	0.0	0.08	10.6
Liberal countries	*29.11*	*27.74*		*1.46*	*6.6*	*17.8*	*0.15*	*19.46*
Austria	12.2	20	Moderate	2.5	16.0	100.0	0.3	27.6
Belgium	12.4	21.4	Moderate	1.7	14.0	76.4	0.23	19.9
France	13.3	24.8	Moderate	1.4	16.0	90.0	0.36	15.4
Germany	9.3	21.2	Moderate	1.2	14.0	100.0	0.07	33.8
Conservative countries	*11.8*	*21.85*		*1.7*	*15.0*	*91.6*	*0.24*	*24.18*
Greece	3.9	23.6	Restrictive	0.9	12.0	50.0	0.07	10.9
Italy	7.6	15.5	Restrictive	0.6	21.5	80.0	0.15	27.7
Portugal	26.6	17	Moderate	0.7	12.9	100.0	0.0	12.0
Spain	11.4	14.2	Moderate	0.4	14.0	75.0	0.44	21.9
Mediterranean countries	*12.375*	*17.57*		*0.65*	*15.1*	*76.25*	*0.16*	*18.12*
Denmark	33.1	27.2	Liberal	1.6	24.0	90.0	0.85	9.1
Finland	39.6	24.4	Liberal	1.6	44.0	80.0	0.74	10.6
Norway	14.7	29.2	Liberal	1.9	18.0	100.0	0.49	22.4
Sweden	39.9	26.6	Liberal	1.6	51.0	71.0	0.58	21.7
Social Democratic countries	*31.83*	*26.85*		*1.68*	*34.25*	*85.25*	*0.67*	*15.95*

Note: Descriptive results are not mean-centered.

Table 2. Macro-level variables policy environment indexes and gap in home possessions and mother's education

	Economic policies favouring low income single-parent families	Economic policies favouring average-income single-parent families	Care-giving	Paid-work	Transition from paid-worker to care-giver	Gap in home possessions	Gap in mother's education
Australia	-53.71	70.29	83	44	67	-0.29	-0.17
Canada	7.09	-79.44	51	50	50	-0.26	-0.16
New Zealand	25.89	21.28	48	62	57	-0.31	-0.18
United Kingdom	-98.49	55.17	100	58	57	-0.25	-0.12
United States	-752.78	238.02	-60	44	-7	-0.32	-0.19
Liberal countries	*-174.4*	*61.06*	*44.4*	*51.6*	*44.8*	*-0.29*	*-0.16*
Austria	731.91	696.16	76	60	19	-0.14	0.09
Belgium	-132.72	-48.37	-15	73	19	-0.32	-0.09
France	-180.34	-31.12	-6	54	0	-0.22	-0.06
Germany	62.56	4.71	76	62	14	-0.19	0.14
Conservative countries	*120.35*	*155.35*	*32.75*	*62.25*	*13*	*-0.22*	*0.02*
Greece	71.84	-77.43	-19	48	-32	-0.08	-0.02
Italy	-227.06	-97.44	-32	57	0	-0.11	0.21
Portugal	-300.68	-60.34	-41	41	0	-0.22	0.25
Spain	84.98	-16.48	-91	69	0	-0.19	0.14
Mediterranean countries	*-92.73*	*-62.92*	*-45.75*	*53.75*	*-8*	*-0.15*	*0.14*
Denmark	593.72	231.18	87	70	23	-0.29	-0.1
Finland	-94.59	435.23	91	73	100	-0.29	-0.13
Norway	893.55	470.37	99	76	26	-0.21	-0.08
Sweden	-310.55	408.12	70	100	0	-0.35	-0.10
Social Democratic countries	*270.53*	*386.23*	*86.75*	*79.75*	*37.25*	*-0.29*	*-0.10*

Table 3. Coefficients and standard errors (Multilevel Binary Logistic Regression) for Arriving late for school.

	Model 1	Model 2	Model 3	Model 4
	Coefficient (s.e)	Coefficient (s.e)	Coefficient (s.e)	Coefficient (s.e)
Intercept	-2.01***(0.10)	-2.07***(0.10)	-2.06***(0.10)	-1.79***(0.10)
Reference: Two parent family		Ref	Ref	Ref
Single mother		0.46***(0.02)	0.35***(0.02)	0.38***(0.05)
Mother and stepfather		0.33***(0.03)	0.28***(0.04)	0.34***(0.08)
Sex		-0.22***(0.01)	-0.21***(0.02)	-0.21***(0.02)
Native Family		Ref	Ref	Ref
Immigrant family		0.32***(0.33)	0.27***(0.03)	0.27***(0.03)
Missing immigrant family		0.46***(0.69)	0.30***(0.07)	0.30***(0.07)
Mother low educational level			Ref	Ref
medium educational level			-0.03 (0.03)	-0.03 (0.03)
high educational level			0.01 (0.04)	0.01 (0.04)
missing education			0.05 (0.04)	0.06 (0.04)
Father low educational level			Ref	Ref
medium educational level			-0.03 (0.03)	-0.03 (0.03)
high educational level			0.04 (0.02)	0.03 (0.03)
missing education			0.18***(0.04)	0.17***(0.04)
Mother blue collar low skilled			Ref	Ref
blue collar high skilled			-0.004	-0.0045
White collar low skilled			-0.00 (0.03)	0.05 (0.03)
White collar high skilled			0.05* (0.03)	0.01 (0.03)
missing occupation			0.23***(0.04)	0.23***(0.04)
Mother working full time			Ref	Ref
working part time			-0.03 (0.02)	-0.03 (0.02)
looking for a work			0.08** (0.04)	0.08** (0.04)
doing other than work			-0.10***(0.03)	-0.11***(0.03)
missing type of work			0.01 (0.08)	0.06 (0.08)
No pre-primary education			Ref	Ref
Pre-primary education			-0.05 (0.04)	-0.05 (0.07)
Missing pre-primary education			0.30***(0.08)	0.30***(0.08)
Home possessions			-0.26***(0.01)	-0.28***(0.01)
Cultural resources			0.00 (0.00)	0.01** (0.00)
Ref : Social democratic countries				Ref
Liberal countries				-0.21 (0.13)
Conservative countries				-0.89***(0.14)
Mediterranean countries				0.01 (0.14)
Ref: Social democratic countries * single mother				Ref
Liberal countries * single mother				0.03 (0.06)
Conservative * single mother				-0.03 (0.08)
Mediterranean * single mother				-0.19** (0.07)
Ref: Social democratic * mother and stepfather				Ref
Liberal countries * mother and stepfather				-0.05 (0.10)
Conservative countries * mother and stepfather				-0.20 (0.14)
Mediterranean countries* mother and stepfather				-0.22 (0.14)
Variance at country level	0.19***	0.19***	0.16***	*0.04****
ICCC	0.05	0.05	0.05	0.01
-2 log likelihood /likelihood	-1.64E+05	-1.63E+05	-1.64E+05	*-1.64E+05*

*p <0.10, **p < 0.05, *** p<0 .001 (two-tailed tests)

Table 4. Coefficients and standard errors (Multilevel Binary Logistic Regression) of main effects and interaction terms of family structure and macro-level indicators.

	Model 1	Model 2	Model 3	Model 4	Model 5
Intercept	-2.01***(0.11)	-2.01***(0.11)	-2.01***(0.11)	-2.01***(0.11)	-2.01***(0.11)
Reference : Two parent family	Ref	Ref	Ref	Ref	Ref
Single mother	0.34***(0.02)	0.34***(0.02)	0.35***(0.02)	0.35***(0.02)	0.35***(0.02)
Mother and stepfather	0.28***(0.04)	0.28***(0.04)	0.29***(0.04)	0.27***(0.04)	0.28***(0.04)
Duration parental leave	0.10 (0.01)				
Paid parental leave		-0.00 (0.00)			
Public spending on child care			0.12 (0.18)		
Percentage single mother part time job				-0.02 (0.01)	
Public Spending on Family Benefit					-0.09 (0.14)
Duration parental leave * single mother	-0.00 (0.00)				
Duration parental leave * mother and stepfather	0.01** (0.00)				
Parental leave benefits* single mother		-0.01** (0.00)			
Parental leave benefits* mother and stepfather		0.00 (0.00)			
Public spending on child care * single mother			0.01 (0.04)		
Public spending on child care * mother and stepfather			0.03 (0.06)		
Public spending on family benefits * single mother				0.00 (0.00)	
Public spending on family benefits * mother and stepfather				- 0.01 (0.01)	
Percentage mother's disrupted families part time job * single mother					0.04 (0.03)
Percentage mother's disrupted families part time job *mother and stepfather					0.05 (0.05)
Variance at country level	*0.15****	*0.16****	*0.16****	*0.15****	*0.15****
ICCC	0.04	0.05	0.05	0.04	0.04
-2 log likelihood /likelihood	*-1.64E+05*	*-1.64E+05*	*-1.65E+05*	*-1.64E+05*	*-1.64E+05*

*p <0.10, **p < 0.05, *** p<0 .001 (two-tailed tests)

Table 5. Coefficients and standard errors (Multilevel Binary Logistic Regression) of main effects and interaction terms of family structure and macro-level indicators.

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Intercept	-2.05***(0.10)	-2.05***(0.10)	-2.05***(0.10)	-2.05***(0.10)	-2.05***(0.10)	-2.07***(0.10)
Reference : Two parent family	Ref	Ref	Ref	Ref	Ref	Ref
Single mother	0.34***(0.03)	0.35***(0.03)	0.34***(0.03)	0.34***(0.02)	0.36***(0.02)	0.34***(0.02)
Mother and stepfather	0.26***(0.04)	0.28***(0.04)	0.26***(0.04)	0.27***(0.03)	0.28***(0.04)	0.24***(0.04)
Care-giving	-0.00　(0.00)					
Benefits –work		0.00　(0.00)				
Transition from Benefits -worker to care-giver-			0.00　(0.00)			
Economic policies favoring low-income single-parent families				-0.00　(0.00)		
Economic policies favoring average-income single-parent families					-0.00　(0.00)	
Gap in home possessions						-0.27　(1.44)
Care-giving and single mother	0.001**(0.00)					
Care-giving * mother and stepfather	0.001**(0.00)					
Benefits –work * single mother		0.01　(0.00)				
Benefits –work *mother and stepfather		0.001　(0.00)				
Transition from Benefits -worker to care-giver * single mother			0.001**(0.00)			
Transition from Benefits -worker to care-giver * mother and stepfather			0.001　(0.00)			
Economic policies favoring low-income single-parent families * single mother				-0.00　(0.00)		
Economic policies favoring low-income single-parent families * mother and stepfather				-0.00　(0.00)		
Economic policies favoring average-income single-parent families * single mother					0.00*　(0.00)	
Economic Policies favoring average-income single-parent families * mother and stepfather					-0.00　(0.00)	
Gap in home possessions * single mother						-0.90***(0..31)
Gap in home possessions * mother and stepfather						-1.63***(0.72)
Variance at country level	*0.17***	*0.17***	*0.17***	*0.17***	*0.17***	*0.17***
ICCC	*0.05*	*0.05*	*0.05*	*0.05*	*0.05*	*0.05*
-2 log likelihood /likelihood	*-1.64E+05*	*-1.64E+05*	*-1.64E+05*	*-1.64E+05*	*-1.64E+05*	*-1.64E+05*

*p <0.10, **p < 0.05, *** p<0 .001< .001 (two-tailed tests)

Table 6. Coefficients and standard errors (Multilevel Binary Logistic Regression) of main effects and interaction terms of family structure and macro-level indicators.

	Model 1	Model 2	Model 3	Model 4
Intercept	-2.01**(0.10)	-2.01***(0.10)	-1.88***(0.15)	-2.07***(0.10)
Reference : Two parent family	Ref	Ref	Ref	Ref
Single mother	0.34***(0.03)	0.34***(0.03)	0.42***(0.03)	0.31***(0.02)
Mother and stepfather	0.23***(0.05)	0.28***(0.04)	0.35***(0.05)	0.22***(0.05)
Percentage Liberal attitudes	0.01* (0.01)			
Percentage of disrupted families		0.01 (0.02)		
Reference: Liberal divorce law			Ref	
Moderate divorce law			0.30 (0.20)	
Restrictive divorce law			0.14 (0.30)	
Gap in mother's education				-0.32 (0.72)
Percentage Liberal attitudes *single mothers	0.01***(0.00)			
Percentage Liberal attitudes * mother and stepfather	0.0 1***(0.01)			
Percentage of disrupted families * single mother		0.01** (0.00)		
Percentage of disrupted families * mother and stepfather		0.00 (0.01)		
Reference: Liberal divorce law * single mother			Ref	
Moderate divorce law * single mother			- 0.21** (0.07)	
Restrictive divorce law * single mother			- 0.12** (0.05)	
Reference: Liberal divorce law *mother and stepfather			Ref	
Moderate divorce law * mother and stepfather			- 0.25 (0.20)	
Restrictive divorce law * mother and stepfather			- 0.15** (0.08)	
Gap in mother's education * single mother				-0.60***(0.16)
Gap in mother's education * mother and stepfather				-0.60* (0.22)
Variance at country level	*0.13****	*0.17****	*0.14****	*0.17****
ICCC	*0.04*	*0.05*	*0.04*	*0.05*
-2 log likelihood /likelihood	*-1.64E+05*	*-1.64E+05*	*-1.64E+05*	*-1.64E+05*

*p <0.10, **p < 0.05, *** p<0 .001 (two-tailed tests)

Table 7. Coefficients and standard errors (Multilevel Binary Logistic Regression) of main effects and interaction terms of family structure and macro-level indicators

	Model 1	Model 2	Model 3	Model 4	Model 5
Intercept	-1.79***(0.10)	-2.01***(0.11)	-2.01***(0.11)	-1.79***(0.10)	-2.01***(0.11)
Reference : Two parent family	Ref	Ref	Ref	Ref	Ref
Single mother	0.33***(0.05)	0.33***(0.02)	0.33***(0.02)	0.33***(0.05)	0.33***(0.02)
Mother and Stepfather	0.23***(0.02)	0.23***(0.04)	0.23***(0.04)	0.23***(0.02)	0.23***(0.04)
Gap in mother's education	0.15 (5.33)	-0.32 (1.22)	-0.32 (2.05)	-0.43 (4.63)	-0.40 (1.65)
Gap in home possession	0.53 (1.44)				
Duration parental leave		-0.00 (0.00)			
Parental leave benefits			0.00 (0.00)		
Average income				-0.00 (0.00)	
Caregiver					0.00 (0.00)
Gap in mother's education* single mother	0.54** (0.02)	0.62** (0.18)	0.60** (0.20)	0.56** (0.16)	0.58** (0.20)
Gap in mother's education * mother and stepfather	0.15 (0.48)	0.63* (0.35)	0.99** (0.35)	0.64* (0.35)	0.46 (0.38)
Gap in home possessions * single mother	0.14 (0.45)				
Gap in home possessions * mother and stepfather	1.47 (0.99)				
Duration parental leave * single mother		-0.01 (0.03)			
Duration parental leave * mother and stepfather		0.01 (0.05)			
Parental leave benefits* single mother			0.00 (0.00)		
Parental leave benefits* mother and stepfather			0.001 (0.00)		
Average income * single mother				0.00 (0.00)	
Average income * mother and stepfather				- 0.001 (0.00)	
Caregiver * single mother					0.00 (0.00)
Caregiver * mother and stepfather					0.001 (0.00)
Variance at country level	*0.18****	*0.15****	*0.17****	*0.18****	*0.18****
ICCC	*0.05*	*0.04*	*0.05*	*0.05*	*0.05*
-2 log likelihood /likelihood	*-1.64E+05*	*-1.64E+05*	*-1.64E+05*	*-1.64E+05*	*-1.64E+05*

*p <0.10, **p < 0.05, *** p<0 .001 (two-tailed tests)

Table 8. Coefficients and standard errors (Multilevel Binary Logistic Regression) of main effects and interaction terms of family structure and macro-level indicators.

	Model 1	Model 2	Model 3	Model 4
Intercept	-2.01***(0.11)	-2.05***(0.09)	-1.79***(0.10)	-2.01***(0.11)
Reference : Two parent family	Ref	Ref	Ref	Ref
Single mother	0.34***(0.02)	0.33***(0.03)	0.33***(0.05)	0.31***(0.04)
Mother and Stepfather	0.28***(0.04)	0.22***(0.04)	0.23***(0.02)	0.20** (0.07)
Gap in mother's education	-0.43 (0.80)	-0.44 (0.80)	-0.44 (0.80)	-0.07 (0.90)
Transition	0.00 (0.00)			
Percentage Liberal attitudes		0.01 (0.01)		
Percentage of disrupted families			0.01 (0.02)	
Reference: Liberal divorce law				Ref
Moderate divorce law				-0.30 (0.20)
Restrictive divorce law				0.14 (0.30)
Gap in mother's education and single mother	-0.63** (0.20)	-0.50** (0.21)	-0.50** (0.21)	-0.39 * (0.23)
Gap in mother's education and mother and stepfather	-0.63 (0.41)	-0.16 (0.42)	-1.02** (0.45)	-0.34 (0.45)
Transition * single mother	-0.00 (0.00)			
Transition * mother and stepfather	0.001 (0.00)			
Percentage Liberal attitudes * single mothers		0.001 (0.30)		
Percentage Liberal attitudes * mother and stepfather		0.009**(0.00)		
Percentage of disrupted families * single mother			0.003 (0.00)	
Percentage of disrupted families * stepfather			-0.011 (0.01)	
Reference: Liberal divorce law *single mother				Ref
Moderate divorce law * single mother				-0.07 (0.06)
Restrictive divorce law * single mother				-0.11 (0.09)
Reference: Liberal divorce law * mother and stepfather				Ref
Moderate divorce law * mother and stepfather				-0.11 (0.09)
Restrictive divorce law *mother and stepfather				-0.14 (0.24)
Variance at country level	*0.18****	*0.18****	*0.18****	*0.16****
ICCC	*0.05*	*0.05*	*0.05*	*0.05*
-2 log likelihood /likelihood	*-1.64E+05*	*-1.64E+05*	*-1.64E+05*	*-1.63E+05*

*p <0.10, **p < 0.05, *** p<0 .001 (two-tailed tests)

6 General Conclusion

6.1   Main contributions and limitations

One of the aims of this dissertation was to provide additional evidence of the effect of parental divorce in European Societies. Despite the increase in divorce and separation in all European societies, there is little European research (with the exception of the United Kingdom) on their effects on children, compared with the enormous number of studies on this issue in the United States. For this reason, this dissertation focused on the study of the effect of parental divorce and family structure on several outcomes of children - such as educational attainment, arriving late for school, parent-child contacts and psychological problems in adulthood - in European and other western countries. Evidence was found that parental divorce and family structure have a negative effect on all dimensions of children's well-being in most of the countries studied, even when possible confounding factors are controlled. However, it must be noted that in most chapters, it was not possible to determine if these effects are causal due to limitations of data. However, these findings corroborate the evidence that the effect of parental divorce cannot be circumscribed to a particular society such as the United States, and suggest that more European research addressing the issue of the causality is needed.

Another goal of this dissertation was to answer two important questions that are present in the Spanish public debate on divorce which the literature, especially in Europe has given insufficient consideration. As mentioned above, few European studies focus on the factors that mediate or moderate the effect of parental divorce or family structure (Amato and James, 2010). Furthermore, few studies compare the effect of parental divorce and family structure in different generations and in different European countries, and even fewer use a multilevel approach. In this dissertation, I focused on addressing these two gaps in the literature.

6.1.1   Which factors mediate or moderate the effect of parental divorce and family structure on children?

The main findings and limitations of this dissertation related to the issue of mediating or moderating factors of parental divorce and family structure are summarized in this section.

In the first chapter, using the British Cohort Study 1970 and structural equation modelling, the question of whether household income, maternal supervision and children's psychological problems after divorce (at 10 years old) mediate the effect of parental divorce on children's educational level at 30 years old was tested. It was found that household income is the most important mediating variable on the effect of parental divorce when the variable parent's education is not introduced in the models, but this is no longer the case when this variable is included. It was shown that the effect of parental divorce on children's educational level is the same for children with a high household income level as it is for children with a low household income level. In other words, parental divorce has similar effects on children with good economic resources after divorce as on those with poor resources. In addition, comparison of children in intact and divorced families, showed that the effect of household income in the offspring's educational level was higher in the intact group than in the divorce group when control variables are not included in the model. By contrast, in the model with control variables, there are no group differences in the effect of family income on children's educational level. It was also tested the role of maternal supervision after divorce, and it was found that this variable mediates part of the effect of parental divorce, but when children from intact families and divorced families are compared, this variable is similarly associated with their educational level in both groups. However, it is important to mention that the British Cohort Study 1970 does not provide the best possible measures of household income and parental supervision. Further studies should therefore replicate these findings.

Nevertheless, one of the strengths of this data is that it contains variables that measure children's psychological problems before and after parental divorce. For this reason, unlike previous studies, in this chapter, it was evaluated the importance of children's psychological problems. It was found that these mediate a small part of the effect of parental divorce on children's educational level. However, it came up that the effect of children's psychological problems on educational level is higher for children from divorced families than for children in intact families. In other words, having psychological problems when aged 10 years old has more long-term consequences for children from divorced families than for children from intact families. This is the main contribution of this study. Further research on divorce should take into consideration the mediating and moderating role of children's psychological problems of the effect of parental divorce.

In the chapter using PISA 2003 data, the question of whether the effect of family structure on arriving late for school is mediated or moderated by cultural resources, home possessions, the mother's educational and occupational level, the mother's type of work and children's pre-primary education attendance in the seventeen countries was analyzed. The main goal of this chapter was to study whether the effect of growing up in a single-mother family decreases when family's and children's resources increase. The main findings are as follows:

First of all, this chapter shows that even after controlling for several children's resources, the effect of growing up in a single-mother family on arriving late for school remains positive and significant in most countries, with the exception of Belgium and Portugal. However, children's resources mediate an important part of the effect of family structure. The most important variables in explaining the effect of single-mother family are home possessions and missing cases of the father's education. In connection with this, an unexpected and interesting finding in the descriptive results emerged: in most countries, with the exception of Greece, the percentage of missing cases of the father's education variable in single-mother families is very high –more than 30% in some countries - compared with those of children of two-parent families. Although the PISA data does not provide information about the cause of single motherhood, it is reasonable to assume that the fathers of most children from these family types are still alive, and the missing cases of the father's education may therefore reflect the father-child relationship. As mentioned above, few European studies analyze if the quality of the relationship with the non-resident parent moderates or mediates the effect of family structure and parental divorce on children's outcomes. This finding suggests that more European research has to be done in that direction.

Whether the mother's educational and occupational level, the number of home possessions, cultural resources at home, the mother's type of work and pre-primary school attendance moderates the effect of growing up in a single-mother family on arriving late for school was also tested. It was found that in most countries, these family's and children's resources do not reduce the effect of living in a single mother family. It is important to note that the number of home possessions diminishes the impact of growing up in a single-mother family in only two countries. Finally, it is important to stress the

main limitations and strengths of this study. The limitations of this chapter are the cross-sectional nature of the PISA data; the fact that the cause of the family structure is unknown; and that there is no information on household income, since there is only information on the number of possessions at home. However, the main strength of this study is that the cross-national nature of the data enables testing of whether several possible explanations of the effect of family structure are valid for several western countries.

In the chapter coauthored with Michael Gähler on the effect of parental divorce on children's psychological problems in Sweden, we found that the offspring's perception of economic conditions during childhood mediates a part of this effect. In addition, in the chapter coauthored with Marco Albertini on the effect of parental divorce on parent-child contacts in four European countries, we demonstrated that the age of the child at the time of divorce does not moderate the effect of parental divorce on parent-child contacts.

In short, the main conclusions reached in this dissertation related to the mediating and moderating factors of the effect of family structure and parental divorce are as follows. First, that economic variables play an important role in mediating the effect of family structure on arriving late for school in most countries, and these are relevant in explaining the effect of parental divorce on psychological problems in Sweden. Second, economic variables are less important in moderating the effects of parental divorce on educational level, and the effect of growing up in a single-mother family on arriving late for school. However, it must be stressed that the datasets used in several chapters of this dissertation do not provide the best possible measures of the household economic situation and for this reason, caution is necessary when drawing conclusions. Third interesting findings about the importance of psychological problems among children of divorce and about the mediating and moderating role of parental supervision are obtained. Further European research on this topic should therefore focus on economic and non-economic mediating and moderating factors, such as quality of parenting, children's psychological well-being and the quality of the relationship with the non-resident father.

6.1.2 Does the effect of parental divorce and family structure decrease when society is more adapted to this new social change? Which macro-level explanations are most relevant?

One of the main questions to be answered by this dissertation is if it is possible to adapt to the increase in parental divorce and new family structures. As mentioned above, several scholars state that Scandinavian countries are the best adapted to family change (Goode, 1993; Hantrais, 2004). For this reason, I focused my attention on those countries.

In one study, co-authored with Michael Gähler, we undertook a cross-cohort comparison of the effects of parental divorce on Swedish adult-children's psychological problems. We used data from two waves of the Swedish Level of Living Survey, conducted in 1968 and 2000, to analyze whether the association between parental divorce and psychological adjustment in 19-34 year olds (i.e. born 1934-1949 and 1966-1981) changed between the two survey years. The results indicated a weakening association over time, but the change is not statistically significant. In other words, we found that parental divorce also has a negative effect on adult-children's psychological problems in Sweden, and that this effect does not decrease over time, despite the liberalization of divorce law and social attitudes, and the development of the Swedish welfare state.

Another two studies compared the effect of parental divorce and family structure between Scandinavian and other European countries. On the one hand, in the study co-authored with Marco Albertini, we used data from Sweden, Denmark, Belgium and France from the Survey of Health, Ageing and Retirement in Europe, to analyze the relationship between parental divorce and the intensity of parent-child contacts. We found no evidence that the effect of parental divorce is lower in the Scandinavian countries than in Belgium or France. On the other hand, using the PISA (Programme for International Student Assessment) 2003 database, a comparison of whether the effects of growing up in a single-mother and mother and stepfather family on arriving late school varied in several welfare regimes is made in the final chapter. This finds that the effect of living in a single-mother family is less strong in Mediterranean countries than in Scandinavian countries, and that the effect of growing up in a mother and stepfather family is the same in Scandinavian countries as in Liberal, Continental and Mediterranean countries.

These results show that the effect of parental divorce and family structure is not lower in Scandinavian countries than in other countries. Other studies reach similar conclusions (Hampden-Thompson, 2009; Breivik and Olweus, 2006; Chapple and Richardson 2009; Björklund, Ginther and Sundström, 2007). In order to clarify the meaning of this conclusion, it is important to cite Chapple and Richardson (2009) in their meta-analytical study comparing the effect of family structure in several countries (published by the OECD):

> *A surprising conclusion of the meta-analysis was the higher-than-average effect sizes found in the Nordic countries, with an overall average for these countries that was similar to the mean United States effect size found by Amato. A reasonable expectation would have been that the large amount of redistribution towards single parents in Nordic countries, together with the extensive provision of family services, would reduce or eliminate causal or selection factors that could lead to worse results for these children. The results presented here suggest that there are other factors at play, and that the Nordic welfare state is not cushioning outcomes for children in single-parent families compared to the United States (p.139).*

In the final chapter of this dissertation, I tried to find the reason for this surprising finding. In other words, I studied different macro-level explanations for the effect of family structure on arriving late for school that have been considered by previous research: divorce laws, family policies, attitudes towards single-parent families and the percentage of disrupted families (single-mother and mother and stepfather families).

In the bivariate analyses, I found that most family policies do not moderate the effect of growing up in a single-mother or mother and stepfather family, with the exception of parental leave benefits. Others moderate this effect, but not in the expected direction, since in countries where family policies are more generous, the effect of growing up in these family types is stronger than in the other countries. The same is true of divorce laws and attitudes towards single mothers, and the percentage of disrupted families in a country. It was found that in countries with a low percentage of disrupted families, and those where attitudes and divorce laws more conservative, the effect of growing up in a single-mother or mother and stepfather family is lower than in other countries. It was also made clear that the country gap in home possessions between two-parent and disrupted families moderates the effects of growing up in a single-mother family or in a mother and stepfather family. In

countries with the lowest gap in home possessions, the effect of family structure on arriving late for school is therefore lower than in countries with the highest gap.

In this study, a macro-level explanation that has been not taken into consideration by previous multilevel studies on the effect of parental divorce and family structure on children was also tested. This explanation was derived following Goode's theory (1962, 1970, 1993) and some empirical studies (Härkönen and Dronkers, 2006; Chan and Halpin, 2005; Martin and Bumpass, 1989). These suggest that in some countries when divorce is rare, it is more common among the upper class, and when divorce becomes more frequent, it also becomes more common among the working class. In accordance with this finding, it was found that in some countries mothers from two-parent families are better educated than mothers from disrupted families, while in other countries the opposite is true. As the mother's education is related to household income and the quality of parenting, it was hypothesized that these differences between countries moderate the effect of family structure. In the bivariate analyses, evidence in favour of this hypothesis was found. In countries where mothers in two-parent families are better educated than mothers in disrupted families, the effects of growing up in a single-mother family or mother and stepfather family are greater than in countries where mothers in disrupted families are better educated than mothers in two parent families.

In the multivariate analyses, it was shown that for children growing up in mother and stepfather families is more important the percentage of disrupted families in a country than the gap in the mother's education. However, as mentioned above, the effect of this variable does not goes in the excepted direction since in countries with the lowest percentage of disrupted families; the effect of growing up in a mother and stepfather family in arriving late for school is higher than in other countries. In contrast, for children in single-parent families, the multivariate analyses show that the interaction between single-mother family and country gap in the mother's education is the unique that remains significant when other macro-level variables are included in the models. In addition, it is important to note that in Scandinavian countries the gap in the mother's education is higher than in the Mediterranean countries. This could explain why the effect of growing up in a single-mother family is higher in the first group of nations than in the second group. However, future research should confirm these findings, taking other possible explanations into

consideration and using more countries in the multilevel analysis and other dependent variables.

In this dissertation, three other findings were also obtained that could explain why the effect of family structure and parental divorce is not lower in Scandinavian than in other western countries. First, in the last study with the PISA 2003 data was demonstrated that the gap in home possessions between two-parent and disrupted families is not lower in Scandinavian countries than in other countries. Second, in the chapter co-authored with Michael Gähler- about the effect of parental divorce on adult-children psychological problems, comparing two Swedish generations -we found that the perception of economic hardship during upbringing has improved for both intact and divorced families. However, the absolute and relative differences in the perception of economic hardship between family types have not declined over time. These findings may come as a surprise given the development of the Swedish welfare state, and its strong focus on income redistribution. Third, in all cohorts the percentage of adult-children from divorced families that report experiencing family dissension in their childhood is higher than the percentage of adult-children from intact families. Even if the differences decrease over time, the percentage of children from divorced families that have had this experience is very high, at around the 40% in the youngest cohort. However, these findings need to be confirmed by future studies.

6.1.3 Two fundamental social questions

Finally, I would like to return to the two fundamental questions mentioned in the introduction, which, in my view, our societies are facing and were involved in the inception of this dissertation. Is family change a simple transformation of the family landscape, or does it have negative consequences for future generations? In other words, is it an important social change? Can we eliminate or cope with the possible negative consequences of this demographic change? As highlighted in the introduction, these questions are related since if the effects of parental divorce are causal, but society can adapt to this social change, then the increase in parental divorce is not a social change that should worry us. In fact, a new social change is less important if we find the ways to eliminate or substantially reduce its possible negative effects.

These questions can not be fully answered with the findings of this dissertation, but I would like to stress that taking the limitations of this dissertation into account, I found no evidence that shows that we are substantially reducing the effect of parental divorce or family structure. Nevertheless, the conclusions of this dissertation need to be proved in further studies.

However, if these conclusions were corroborated, it would be necessary to consider the issue of causality in order to evaluate the importance of family change. There are two possibilities. On the one hand, if the effect of parental divorce was not causal, the increase in parental divorce would only increase the visibility of other social problems such as family conflict, which existed even before the rise in divorce rates. In that case, we should not worry about the increase in parental divorce. Nonetheless, this would only make the problem more visible, and would enable us to find solutions. On the other hand, if the effect was causal, it would be necessary to pay attention to this new social change. It is important to stress that there are various positions in the literature related to this issue: several researchers consider that there is enough evidence to believe that part of the effect is causal (Amato and James, 2010), but others argue that the present state of the literature supports either the causal or the selection explanation (Chapple and Richardson, 2009). For this reason, further research should take the adaptation hypothesis and the issue of causality into account.

6.2   Possible future research

Based in the findings of my dissertation, I argued that more research is necessary: on the issue of causality of the effect of parental divorce and family structure; about the mediating and moderating factors of these effects and; comparing these effects in different countries and generations. In this section, possible ways in order to improve European research on these issues are suggested. I also propose how to increase research on the effects of parental divorce and family structure in Spain.

6.2.1 Causality

To my knowledge, there are few databases in Europe that take into account possible confounding factors of the effect of parental divorce, such as parent-child genetic characteristics and family conflict. The British data Millennium Cohort Study, which follows the generation born in 2000, provides a unique opportunity to address this gap. Although there is no direct information on family conflict, there are measurements of couple's relationship satisfaction in several waves at 9 months, at 3 years old and at 5 years old. This information enables two kinds of interesting analyses to be undertaken.

The first, is to test if when controlling for couple's relationship satisfaction, the effect of parental divorce on children's cognitive and psychological development is significant. The second is to analyze whether the effect of parental divorce is higher for children whose parents had a high level of relationship satisfaction before parental divorce, than for those whose parents had a low level. Several American scholars find that the effect of parental divorce is higher in children from low conflict families than for children from high conflict ones, and for the latter it is sometimes even positive (Amato, Loomis & Booth 1995; Booth & Amato 2001). To my knowledge, this kind of analysis has not been undertaken in Europe.

6.2.2 Mediating and moderating factors of the effect of parental divorce and family structure

There are several possibilities for expanding European research into the mediating and moderating factors of parental divorce and family structure, especially the non-monetary factors such as children's psychological well-being after divorce:

The British data Millennium Cohort Study 2000 also permits testing for several possible mediators and moderators. First, this survey has good measures of the quality of parenting that takes several dimensions into account, including the parent-child relationship, activities related to cognitive development, sleeping and eating habits and parenting practices. These parenting variables are measured before and after parental separation. Second, it contains information on parental mental health before the parental divorce. The

same information is provided for the resident parent after parental divorce. There are also measures of household income before and after parental divorce. Third, it contains information on non-residential parent involvement, such as the frequency of contact with the child, quality of their relationship and parental payment of child support. This data therefore makes it possible to take into account the mediating and moderating role of these variables on the effect of parental divorce in cognitive and psychological outcomes in the same analysis. In addition, it provides an opportunity to study whether the psychological well-being of children after parental divorce mediates or moderates its effect on several cognitive dimensions.

The British Cohort Study 1970 survey, which was used in this dissertation, also enables study of the mediating and moderating role of young children's psychological problems after parental divorce on several long-term outcomes that were not analyzed in this study. Possible outcome variables are partnership history, the quality of the relationship with the mother and father and income at 30 and 35 years old.

In addition, chapter four focused on one of the aspects of students' engagement, i.e. the behavioural dimension. It analyzed whether home possessions, the mother's education and occupation and cultural resources moderate the effect of family structure on late arrival for school in several countries. The PISA data for 2003 and 2000 enables replication of the same analyses while studying other outcome variables related to the affective dimension of engagement, such as attitudes towards school, student-teacher relations at school and the sense of belonging to school.

Finally, the Cross-National Equivalent Database 1970-2008 contains equivalently defined variables for the British Household Panel Study (BHPS), the Household Income and Labour Dynamics in Australia (HILDA), the Korea Labor and Income Panel Study (KLIPS), the Panel Study of Income Dynamics (PSID), the Swiss Household Panel (SHP), the Canadian Survey of Labour and Income Dynamics (SLID), and the German Socio-Economic Panel (SOEP). I have not explored all the possibilities of these integrated databases, but it seems that they at least enable study of the effect of parental divorce on

educational level, and of the mediating and moderating role of family income from a cross-national perspective.

6.2.3 Comparing countries and generations

In the conclusions of my dissertation, I emphasized that more studies are necessary in order to test whether the effect of parental divorce and family structure decrease when the society is more adapted to family changes. There are two ways of testing this hypothesis: comparing countries and comparing generations. The suggestions to improve research in this issue are as follows:

Sigle-Rushton, Hobcraft and Kiernan (2005) compare the effect of parental divorce in two British generations, which were born in 1958 and 1970, using the National Child Development Study and the British Cohort Study 1970. They focus on several kinds of long and short term outcomes: cognitive and psychological outcomes at 10 years old, and educational level and receipt of benefits and mental health at 30 years old. However, it is possible to perform the same analysis, studying other long-term outcomes such as partnership and earning histories and the quality of the relationship with the mother and father.

The Swedish Level of Living Survey (LNU) was also used in this dissertation to test whether the effect of parental divorce on adult-children's psychological well-being changes over time. However, it is also possible to use the same data and approach in order to study other long term effects, including educational level, the transmission of divorce and earnings.

The Survey of Health, Ageing and Retirement in Europe (SHARE) data was also used in order to study the effect of parental divorce on parent-child contacts, comparing several European countries. This data enables the same analysis to be carried out, taking into account other outcomes of intergenerational relationships, such as financial support and social support. These variables can be analyzed in both directions- from parents to children and from children to parents. In this dissertation, we did not analyze the Mediterranean

countries, because there are few cases of divorced parents in these countries in the first wave of SHARE data. The second wave is now available and it is likely that the number of divorcees in Mediterranean countries has increased.

In addition, as mentioned above, the Cross-National Equivalent data base 1970-2000, which contains equivalently defined variables for several panels, enables comparison of the effect of parental divorce and family structure on children in several countries such as the United States, the United Kingdom and Germany.

Finally, the Gender and Generations Survey, coordinated by the Population Activities Unit of the United Nations Economic Commission for Europe, contains information on parental divorce and adult-children's outcomes such as socio-economic characteristics, mental and physical well-being and demographic behaviour. The countries that participated in the first wave are Bulgaria, France, Georgia, Germany, Hungary, the Netherlands, Romania and the Russian Federation.

Furthermore, the Contextual Database of the Generations and Gender Program is a comparative collection of around 200 contextual variables on the national and regional level for each country participating in the International Generations and Gender Program. The variables describe variations of context over time and between regions, and include statistical norms, legal norms and regulations, measures of welfare state policies and institutions, as well as general economic and cultural indicators. This database therefore not only enables country comparisons, but also a multilevel analysis. Although the number of countries participating in the first wave is not enough to perform a multilevel analysis at country level, the contextual information at sub-national level allow this kind of analysis to be undertaken. There is contextual data for Bulgaria, Russia, Hungary, Canada, Romania, Lithuania, Poland, Norway and Georgia. It is therefore possible, for example, to examine how divorce rates and attitudes towards new family structures at sub-national level, moderate the effect of parental divorce on several dimensions of children's well-being in several countries.

To my knowledge, there are few surveys that enable a multilevel analysis of the effect of parental divorce and family structure. Another possibility is to replicate the multilevel analysis that was performed in this dissertation using PISA 2003, but studying other dependent variables (such as the student's attitudes towards the school, student-teacher relations at school and the sense of belonging to the school).

6.2.4 Spanish studies on the effect of parental divorce and family structure

As mentioned, the main problem in studying the effect of parental divorce and family structure in Spain is the lack of data. However, Spain is a very interesting case because it has experienced a rapid and important demographic and cultural transformation during the last 10 years (Becerril, 2008). In order to address this gap in my knowledge, there are not many possibilities, although some of them are as follows:

The first possibility is to use cross-national databases that include Spain. For example, the PISA 2003 enables a study of the relationship between family structure and several cognitive and non cognitive outcomes in Spain. This data also allows a comparison of the effect of family structure in three Spanish regions (Catalonia, the Basque Country and Castilla Leon) that have different divorce rates and differing levels of acceptance of new family structures. In addition, it is possible to undertake a multilevel analysis at school level when using this survey. In Spain, the effect of family structure might be moderated by various school characteristics, such as whether the school is in a city or in a village, or the percentage of children from single-mother families in the school. In further studies, I will try to carry out these analyses.

Finally there is a new panel of data, the Panel of Families and Childhood (Panel de Famílies i Infància) that follows Catalan students from the first year of secondary school (11 years old) until they are 19 years old. It contains information on family structure and several family socio-economic characteristics and parental styles, and several dependent variables such as school marks. The cross-sectional Survey of Childhood in Spain 2008 (Encuesta de Infancia en España 2008) also enables the effect of parental divorce on several dimensions of children's well-being to be studied.

6.3 Policy recommendations

In these sections relating to the main findings of this dissertation, several policies that policymakers might take into consideration are suggested. These range from the need to improve survey data to various kinds of policies related to the effect of parental divorce. I focus particularly on the new innovative policies that several countries are implementing.

6.3.1 Longitudinal survey of families and children

The main problem when making policy recommendations is that is still necessary to find out more about process of divorce and its impact on children. My first policy recommendation, and the most important one, is therefore that European governments, in coordination with the European Commission, should fund a longitudinal and cross-national survey that specifically studies the effects of parental divorce and family structure. In Europe, few countries carry out longitudinal surveys, and in those that do, the most important aim of these surveys is not to study the process of divorce and several other aspects of family life, but instead the family's living conditions and economic characteristics. In other words, the few cross-national longitudinal surveys that exist were not created specifically to study the process of divorce, and as such important information is missing. For example, the goal of the SHARE data is to study the ageing process, and it contains little information about children and divorce.

In my opinion, the best surveys for studying the effect of parental divorce on children are the longitudinal cohort surveys such as the Millennium Cohort Study 2000. As mentioned above, this survey follows a generation of children born in 2000 and includes a great deal of information about their development and family life. However, some important variables that are necessary in order to study the process of divorce are missing, such as parental conflict and genetic characteristics. My first policy recommendation is therefore to undertake a longitudinal cohort survey of families and children in all European Countries, following the example of Millennium Cohort Study and adding the missing information.

I am fully aware that this is a difficult goal. However, as mentioned above, the European Commission is already funding a survey on the ageing process, which is one of the most important processes that Europe is facing today. Similarly, it cannot be denied that the increase in divorce rates and separation is also one of the most important social transformations that is occurring in Europe, and that this change might affect children. It would be very useful for policymakers and society if social scientists had the best tools to study this process.

As mentioned above, Spain is one of the countries in Europe where studying the effect of parental divorce on children is most difficult. My policy recommendation for the Spanish government is therefore to fund a longitudinal survey. However, this seems unlikely to happen at present. For this reason, the government should at least fund a cross-sectional data of families and children. This would provide a general idea about what is happening in the Spanish context.

6.3.2 Policies

There are several policies that have been elaborated and implemented that should be taken into account. In this part, the policy recommendations proposed have been organized according to several policy distinctions: traditional and innovative policies, and policies acting before or after that the divorce has taken place. The aim is not to report all existent and necessary policies, but only those that are related to my main findings.

6.3.2.1 Traditional ex-post policies

Using PISA 2003 data, it was demonstrated that in all countries analyzed, there are significant differences in terms of the number of possessions at home between disrupted families and two-parent families, which means that the former have more financial problems that the latter. It was also showed that these differences explain part of the effect of growing up in a single-mother family on arriving late for school. I recommend policies aimed at addressing this gap for this reason. I do not suggest targeting financial help to single parent families because some children in these family types could have a higher income level than children in two-parent families. As Chaple and Richardson (2009) say,

crudely targeting resources towards single parents is likely to lead to high false positives (providing a service to children of single-parent families who have no need of it) and high false negatives (not providing a service to children of two-parent families who have need of it).

Second, in the macro-level analysis it was found that maternity/parental leave benefits - expressed as a percentage of women's wages in manufacturing- reduce the effect of growing up in a single-mother family on arriving late for school. Pong, Dronkers and Hampden-Thompson (2003) and Garib, Martin Garcia and Dronkers (2007) show that the length of parental leave moderates the effect of growing up in a single-mother family. Furthermore, although I did not find any evidence on policies related to childcare, de Lange, Dronkers and Woldbers (2008) show that the negative effect of growing up with a single mother on test scores is reduced in countries with extensive policies for supporting families by means of childcare. Governments should therefore also consider improving these policies.

6.3.2.2 Innovative ex-post and ex-ante policies

The policies above are those that have been most extensively developed and implemented by governments in order to help families in general, and single-parent families in particular. The aim of these policies is to create better conditions for families –by means of financial transfers, parental leave and childcare- in order to promote children's development. However, in my dissertation, it was found that parental supervision mediates part of the effect of parental divorce on children's educational level. It was also demonstrated that children's psychological well-being is associated with the educational level of children of divorce, and that in Sweden, which is one of the countries where policies related parental leave, childcare and family financial help are most highly developed, parental divorce also has an effect on children's psychological well-being. In addition, it was shown that the effects of parental divorce and family structure are not less marked in Scandinavian countries than in other countries. In other words, it seems that these policies are not enough to eliminate the selection or causal effect of parental divorce and single motherhood.

Although it is impossible to directly derive policy recommendations from these findings, since more studies are necessary in order to confirm them, in my opinion these might suggest that innovative policies for helping families need to be created. In other words, it is not enough to offer good conditions for the families, but instead it is also necessary to improve what I call the emotional and relationship dimension of the family. In the following sections, I set out two policy recommendations that take these dimensions into account, the first focusing on after the parental divorce, and the second a preventive policy focusing on before the divorce.

New ex post policies

Few governments take really into consideration issues related to parenting and psychological well-being. In addition, in Spain at least, most policies related to families are segmented, which makes it more difficult for a family in need to access services. Taking these considerations into account, I would like to mention a programme called Sure Start, which has been in place in the United Kingdom since early 2000. This programme aims to overcome the segmentation of family policies, and to promote parenting and family emotional well-being at the same time. This programme originated from the Cross-Departmental Review of Services for Young Children. This Review noted that the services being provided were uncoordinated and patchy, and recommended a change in service design and delivery. It suggested that programmes should be jointly planned by all relevant bodies, and be area-based, with all children under four years old in an area and their families being clients.

The Sure-Start Children's Centres Practice Guidance (2006), produced by the Department for Education and Skills and the Department of Health of the United Kingdom, explains the main characteristics of this programme:

1- This is based on the scientific evidence that the children's first years of life are crucial in fostering their future development. Several services related to this specific stage of the family development are therefore provided. Using an integrated approach, these centres provide various kinds of services, ranging from parenting to employment support and family health.

2- Most centres are in disadvantaged areas. The goal is to reach most families, and especially most disadvantaged families such as single parents, living or not in deprived areas. The latter have less contact with the mainstream services than other family types. Several methods are used in order to reach these families such as home visiting

3- These centres use a multi-agency approach, which means working in partnership with other public agencies and social organizations, such as voluntary organizations, private companies and social enterprises in order to increase the number of services offered. In fact, this guide also stresses that social organizations might not only supply services but also run children's centres.

In addition, the guide contains a list of the several services that these centres should provide. In order to promote children's development, some centres offer high quality childcare or give parents information on other good quality care providers. They monitor each child's progress and use records to keep parents up to date with how their child is doing, and encourage them to be actively involved in their child's learning. The idea is to promote the child's learning in the centre and at home. For this reason, they provide several services for promoting parenting. First of all, they offer structured, validated, evidence-based parenting programmes for parents of children aged 0-5 who need support. Some programmes are based on strengthening relationships and building self-esteem and social competence; others are aimed at parents whose children are already displaying significant behavioural problems. Another more informal way that they support parenting is through parenting support groups, for new parents to share experiences.

Another service that these centres can provide is in the field of mental health. One of the goals of these centres is to improve the mental health of families and children. Staff should be trained to be able to recognise mental health problems. Because the staff at these centres are in contact with the families through other services - such as parenting support, childcare and employment support - they can recognise when children and parents have mental health problems. Other services, such as the health services, have less intensive contact with the families, and those most in need might not have any contact with them. These services are therefore less able to detect whether a child or his/her parents have

psychological problems. The centres provided services related to mental health issues and work in partnership with other agencies. Home visits are recommended when some parents with mental health difficulties may be reluctant to access centre-based services.

Several evaluations of Sure Start programmes were carried out. Previous evaluations of the efficacy of this programme were inconclusive, and several changes were introduced for this reason (Melhuish, Belsky and Barnes, 2010). Subsequent evaluations showed that this programme has positive effects on parents and children (Melhuish, Belsky and Barnes, 2010). Melhuish et al., (2008) in their longitudinal investigation of children and families seen at 9 months and 3 years of age, comparing children in Sure Start areas with those in similar non-Sure Start areas, reveal beneficial effects for children and families living in Sure Start areas, when the children were 3 years old. Children in Sure Start areas show better social development, exhibiting more positive social behaviour and greater independence/self-regulation than their counterparts in non-Sure Start areas. This result is partially a consequence of parents in Sure Start areas manifesting less negative parenting, as well as a better home learning environment. The effects of Sure Start programmes seem to apply to all subpopulations, including single parents. In my opinion, it is therefore necessary to take future evaluations of this programme into account, in order to determine whether it could be suitable for implementation in other countries, such as Spain.

New ex ante policies

Most policies related to the issue of parental divorce are implemented after the divorce has taken place. However, if the findings of this dissertation (related to the fact that the selection or causal effect of parental divorce and family structure is not reduced in Scandinavian countries) are confirmed, they might suggest that it might also be necessary to transform the nature of our policies. Most ex-post policies explicitly or implicitly assume that the causal or selection effects of parental divorce, such as parental conflict, can be solved after parental separation. Furthermore, these policies do not take into consideration children that are experiencing family conflict whose parents do not divorce.

In order to address these issues, over the last fifteen years, governments from different countries with different welfare state regimes and cultural values - such as the United

States, Norway, the United Kingdom and Denmark - have adopted policies aimed at fostering relationship quality in partnerships. In all western countries, marriage counselling or education services provided by private psychologists or social organizations have existed for some time. What is different today is that governments have started to fund these services. This is a new international trend that has not been systematically studied, and which represents a substantial transformation of family policies. The basic idea behind these new policies is that improving the quality of partnership relationships makes it possible to avoid both family conflict and divorce, and to foster children's well-being.

In fact, there is some evidence related to this issue: researchers and practitioners argue that marital therapy is likely to be only modestly successful, given that couples are often seriously distressed by the time they seek help (Christesen, 1999). In contrast, a number of reviews suggest that premarital education is effective (e.g., Carroll & Doherty, 2003; Hawkins et al., 2008). Furthermore, Stanley et al., (2006) using a large random survey of 4 middle American states, find that participation in premarital education is associated with higher levels of satisfaction and commitment in marriage and lower levels of conflict — and also a reduced likelihood of divorce. Because these estimated effects are robust across race, income (including among the poor), and education levels, the authors consider that participation in premarital education is generally beneficial for a wide range of couples.

I have some reservations with regard to these policies. However, Chapple and Richardson (2009) in their OECD publication about the effect of single motherhood, which reaches the same conclusions as this dissertation, suggest that policymakers should take into account the policies being implemented in the United States that focus on improving partnership relationship quality and stability. I agree with this suggestion; for this reason, I summarize some of the main characteristics of these policies in this section.

Rationale of the policy

There are several characteristics of policies on partnership relationship quality related to the policy's rationale that deserve to be highlighted. First, the quality of the partnership relationship has traditionally belonged within the private family sphere, and has been free of state intervention other than in cases of severe dysfunction, e.g. child abuse and neglect

(Hansen Helskog, 2009). These new policies challenge the classical distinction between the private and the public spheres. In fact, many of their opponents criticize what they see as an invasion of family life by the state. However, most supporters argue that access to these services is on a voluntary basis (for a discussion, see McLanahan, Donahue, and Haskins, 2005, and Hawkins et al., 2009).

Second, it is important to note how governments justify these policies. Danish and Norwegian government stress the fact that divorce is negative for some children (Ministry of Children and Family Affairs and Ministry of Foreign Affairs, 2003; Danish Report in Family Policy in 2005). In the United States, the justification of the policy is not directly related to divorce, but to healthy marriages. In other words, it is emphasized that not all marriages should be maintained and that the aim of the policy is to promote good quality marriages (Amato, 2007). However, for all these governments the main aim is to improve children's well-being but, instead of focusing the policy directly on children, they intervene on parents. Third, most governments use the findings of research in social science in order to justify these policies. The use of research findings is higher in this policy than in other family policies. As an example, in 2005 the Danish Family Policy Report stated:

> *A study of children born in 1995 shows that the great majority of 7½ year-old Danish children of divorced parents appear to thrive just as well as children in nuclear families, though a small group of children from broken homes do experience more difficulties than their contemporaries.*
>
> *(…)Although we know this, divorce is normally a dramatic parting that not only affects children here and now, but may also have serious consequences for them for several years afterwards and for their own subsequent handling of family conflict. (…) For 2005 and the next three years, the Government has allocated a total of DKK 40 million for couple counselling, the purpose of which is to put in hand preventive measures on behalf of parents who wish to retain their partnership or of those who wish their cohabitation to end in the least damaging way possible, particularly as regards the children.*

Similarly, policy reports in the United States explain that their policies are based on several research findings (Myrick, Ooms and Patterson, 2009). The arguments deployed are that research has shown that:1. Family dissolution has negative effects on adults' and children's well-being; 2. Marriage education programmes are effective in promoting marital quality and stability.

Implementation and evaluation of the policy:

In this section, the Norwegian and American policies are analyzed in more depth, since that is where they are most extensively developed.

Norway

In 1994 the Ministry of Children and Family Affairs established a scheme whereby grants are provided for relationship education programmes (Ministry of Children and Family Affairs & Ministry of Foreign Affairs, 2003). Before 1994, there were only a few educational programmes for couples, mainly provided by Christian church organizations. The government initiative resulted in many new organizations and agencies becoming involved in this field, and now only 40% of the applications for support to run relationship education courses come from Christian organizations (Thuen and Lærum, 2005).

Thuen and Lærum (2005) argue that there are two main characteristics of the Norwegian programmes compared with this policy in the United States. The first is that no distinction is made between cohabitating and married couples, since the same programmes are aimed to both groups of couples. The second is the involvement of national authorities. Since there is a long tradition in the Scandinavian countries of the state assuming an extensive responsibility for the welfare of individuals and for living conditions of families, several programmes are implemented by local and regional authorities or local family support services. Among the local and regional authorities, most agencies involved are often part of the primary healthcare services (Thuen and Lærum, 2005).

There are various kinds of subsidized programmes that promote relationship quality, ranging from by locally run programmes based on Christian values and led by non-professional peer leaders, to programmes that are standardized, led by professionals, and based on theoretical or evidence-based knowledge (Thuen and Lærum, 2005). Among the

latter programmes, the most important is the PREP, which was introduced and promoted in Norway by the Family Relations Centre, a charitable foundation. PREP is a research-based approach designed to provide couples with knowledge, communication, and problem-solving skills associated with effective relational functioning (Markman, Stanley and Blumberg, 2001). The PREP is designed for younger people establishing their marriage, but in Norway it is offered to cohabitating and married couples and older and younger couples. The mean relationship duration is 13.3 years (Thuen, and Lærum, 2005). Between 1999 and 2007, 9,000 couples attended PREP workshops in Norway (Hansen Helskog, 2009).

Another example of a relationship education programme is the state-run programme "Living Together Nicely" (Godt samliv). This is offered to parents during the first year after their first child's birth. The main characteristic of this program is that it is state-run. The funding was granted in the 2004 state budget, and it was a cross-political agreement that this program would be a good family policy initiative to strengthen relationships and prevent divorce (Hansen Helskog, 2009). The aim of this program is to offer one day of relationship education, free of charge, on the arrival of the first-born child. In 2007, 335 of these government-run courses for couples were held all over Norway and 2,100 couples participated in the courses. Finally, there is another program, the Rainbow Project, which started in 2004, in order to prevent relationship problems in families from a non-western minority background, and to help these families adjust to their social environment (Hansen Helskog, 2009).

I found no evaluations of these programmes in terms of whether they improve marital satisfaction and prevent divorce in the long run. However, Thuen and Lærum (2005) carry out a study of the PREP program showing that 85% of participants are quite or very satisfied, and 30% give the highest possible score in terms of overall satisfaction with the workshop. In this regard, Hansen Helskog (2009) argue that: *it is impossible to link these efforts conclusively with the decrease in divorce rates and increase in marriage rates during the last few years but there is at least the possibility that fifteen years of talk and action on relationship education may have contributed to a cultural change (p.147).*

The primary characteristic of policies promoting marital quality in the United States is that they have to some extent been supported by three different administrations from different political parties, with Presidents Clinton, Bush and Obama allocating funds to these policies. These policies originated in the welfare reform legislation of 1996. The primary goal of this law was to promote employment and to reduce dependency, but it was also the first federal law to explicitly promote efforts to strengthen marriage (Hawkins et al., 2009). Although the states were able to use some of the federal TANF (Temporary Assistance for Needy Families) funds in order to strengthen marriages, few states have used these funds in that direction. In 2002 the Administration for Children and Families, Department of Health and Human Services launched a Healthy Marriage Initiative. In 2005 the U.S. Congress passed the Deficit Reduction Act (DRA), which was signed into law by President Bush and implemented in early 2006. The DRA allocated $150 million a year for five years to funding healthy marriage and responsible fatherhood programmes (Dion, 2005). President Barack Obama's 2010 budget proposed a new Fatherhood, Marriage, and Family Innovation Fund amounting to $500 million. Half of the $500 million would be used for competitive grants to address issues of fatherhood and marriage promotion in a more comprehensive fashion.

The web page (http://www.acf.hhs.gov/healthymarriage) of the Healthy Marriage Initiative mentions that funds are used for both research and projects to test promising approaches for fostering healthy marriages and promoting involved, committed, and responsible fatherhood by public and private entities. It is important to note that one of the aims of this initiative is that investing public funding in these programmes would help to spur public and private efforts to promote couples' relationships (Hawkins and Ooms, forthcoming).

Some of the activities that are funded by this initiative are public advertising campaigns; marriage education, marriage skills, and relationship skills programmes for expectant couples, both married and unmarried, as well as recent parents, both married and unmarried; pre-marital education and marriage skills training for engaged couples and for couples or individuals interested in marriage; marriage enhancement and marriage skills training programmes for married couples; marriage mentoring programmes which use

married couples as role models and mentors in at-risk communities. The web page of the initiative also states what Healthy Marriage Initiative is not about: coercing anyone to marry or remain in unhealthy relationships; withdrawing supports from single parents, or diminishing, either directly or indirectly, the important work of single parents; stigmatizing those who choose divorce; limiting access to divorce; promoting the initiative as a panacea for achieving positive outcomes for child and family well-being; running a federal dating service; an immediate solution to lifting all families out of poverty. In addition, in order to promote only healthy relationships, all programmes that are financed by the Healthy Marriage Initiative, have to consult experts in domestic violence and to ensure that participation is voluntary.

Around 200 programmes are financed by the Healthy Marriage Initiative, without taking into account programmes that are funded by the States (Hawkins et al., 2009). The Administration for Children and Families has also invested in three large-scale, multisite, long-term evaluation projects. These programmes are designed for low-income couples, because in the United States these couples are most likely to experience the breakdown of their relationship. There is strong evidence that marriage education can generally be effective in improving relationship satisfaction and communication among white and highly educated couples, but less is known about whether these programmes, including those that have been carefully adapted, will work with more diverse and less advantaged individuals (Dion, 2005). There is also no empirical evidence that marriage education programmes can increase the well-being of children (Dion, 2005). For these reasons, the aim of these evaluations is to test whether these programmes are effective for low-income couples and their children.

The Supporting Healthy Marriages project, launched in 2003, focuses on low-income married couples with children, who were enrolled in eight programmes across the United States (Dion, 2005). Most marriage education programmes only focus on the couple relationship process (Knox and Fein, 2008). However, sociologists and economists stress that several personal, family, and community demographic factors are associated with a variety of family outcomes (Amato, Johnson, Booth and Rogers, 2003; Burstein, 2007). These factors are especially important for low-income couples (Knox and Fein, 2008). For this reason, this program focuses on three levels: the personal characteristics of the

partners such as mental health and substance abuse; relationships insights, values, expectations, and skills and external influences and the macro context.

The core of each programme is 24 to 30 hours of marriage education workshops provided in a group setting, over several (typically two to four) months. The first three areas of the curriculum traditional concerns of marriage education, such as understanding marriage, managing conflict and promoting positive connections between spouses (Knox and Fein, 2008). Other areas of the curriculum are designed to provide insights and skills pertinent to several broad external challenges. These areas include strengthening relationships beyond the couple; enhancing the couple's ability to manage challenging external circumstances such as mental health problems, financial stress and strengthening parenting. The second component of this programme is engaging participants in additional activities for a full year (about nine months beyond the core programme) (Knox and Fein, 2008). Examples of the activities are booster sessions, one-on-one coaching mentoring by programme staff or peers, activities for the whole family. The third component is to help couples gain access to a wide range of services and supports, such as physical or mental health services, substance abuse treatment, housing assistance, employment and training services, or childcare (Knox and Fein, 2008).

Experimental research design is used to evaluate this project. Each of the eight programmes has to randomly assign up to 800 couples to either an intervention group or a control group. Random assignment assures that the systematic differences that later appear between the intervention and control groups can reliably be attributed to the marriage education services being studied rather than to pre-existing differences (Knox and Fein, 2008). The evaluation takes place in several dimensions: marital quality; marital duration and stability; the mental health and employment status of each individual spouse; family income; co-parenting and parenting behaviour; and child well-being including direct assessments of children's cognitive and behavioural development (Knox and Fein, 2008). These potential programme impacts are measured at 12 and 36 months after random assignment —and possibly at 60 months if earlier findings reveal impacts (Knox and Fein, 2008). A report on the interim impacts is expected in 2010, and a report on the longer-term impacts on 2012.

Another study, the Building Strong Families project, launched in late 2002, enrolled more than 5,000 low-income unmarried parents recruited around the time of the birth of their first child across eight programmes (Dion, 2005). The concept of the programme was motivated by findings by the Fragile Families and Child Well-being Survey, which showed that more than 80 percent of unwed couples are romantically involved at the time of their child's birth. Although many of these couples expect to marry, very few do so, and many break up quickly (Dion, 2005). Although this project targets unmarried couples, its goal is not to persuade them to marry, but to improve the quality and stability of their relationships, and also to support couples who do wish to marry (Dion, 2005). The method of evaluation of this project is the same as the project above. The study participants were randomly assigned to intervention and control groups.

Intervention-group couples received up to 42 hours of group-based instruction over a period of six months, which was usually delivered in weekly sessions. Group sessions usually involved six or nine couples (Dion, 2005). Several topics were covered during these sessions, such as communication and conflict management skills, affection and intimacy, trust and commitment, adjusting to a new baby, parent-infant interactions, learning about marriage, co-parenting and managing complex family relationships, emotion regulation and communicating about money (Dion, 2005). Specially trained coordinators assessed and linked couples to additional services as needed -such as employment, childcare, physical and mental health, and substance abuse services- and provided ongoing support to individual couples over a year or longer. Researchers are evaluating the impact of the programme on the quality of the couple relationship, the decision to marry, and children's well-being, among other measures. The participants studied complete an initial baseline survey at the time they volunteered for the programme and are surveyed again about 15 and 36 months later (Hawkins and Ooms, forthcoming). For the 36-month data collection, researchers also conduct in-home observations of the children and parent-child interactions. Findings on the interim impacts 15 months after enrolment in the programme will be available in early 2010, with the final results based on the 36-month follow-up available in 2012 (Hawkins and Ooms, forthcoming).

The third large-scale evaluation is the Community Healthy Marriage and Relationship Education Evaluation (CHRMEE) programme, which has two components. The first

involves implementation evaluations of 14 healthy marriage and relationship education services (Hawkins and Ooms, forthcoming). The second component is an impact evaluation that will compare community level outcomes using a matched comparison-site design. Three low-income communities with federal grant funding to support community-wide healthy marriage initiatives are matched with three comparison sites with little or no special funding for similar activities (Hawkins and Ooms, forthcoming). The findings from the impact evaluations will be available in 2011.

In conclusion, my policy recommendation is that policy makers should follow the evaluations of these projects in order to ascertain whether they improve children's well-being. It is important to note that Chapple and Richardson (2009) refer to them in the following terms: *these trials will provide significant information about what works in this area for child well-being, which is extremely useful information for other OECD member countries (p.141).* As mentioned above, conventional and non conventional policies for children that have already experienced their parental divorce or that they live in a single parent family should also been applied and improved. However, as stated previously, the most important policy recommendation in my opinion is to undertake a Longitudinal Survey in Spain and at European level in order to study children and their families.

In conclusion, in this dissertation I tried have to expand the European literature on the effects of parental divorce and family structure in several dimensions of children's well-being, emphasizing two main research issues. The first is related to factors that moderate and mediate the effect of parental divorce and family structure. The second considers whether the effect of parental divorce and family structure varies in different countries and generations. The aim of this dissertation was to answer two fundamental questions which in my opinion our societies are facing, about the social importance of family change and our capacity to adapt to it. As stated above, more research is needed since this dissertation is only a very limited attempt to answer these questions. For this reason, I will continue to study them in the near future. Taking into account all my acquired intellectual and methodological background, I think that one of my duties as social scientist is to contribute to answering these two fundamental questions and to find policies for improving the well-being of children. This is a fascinating task that I have only just begun with this dissertation.

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7 Appendix

7.1   Appendix chapter 1

Analysis 1: Sample of the Paper

In these analyses I use the sample that I have used in the paper. I have created this sample using information about family structure collected at the waves 1 (age 5), wave 2 (age 10) and wave 5 (age 30) and I applied multiple imputation.

1.1. Main model mediating variables of the effect of parental divorce

1.1.1 Correlation Matrix

	EDUCATION[48]	DIVORCE	TEST_VOC	PSICO_10	INCOME	SUPERVISION
EDUCATION	1.00					
DIVORCE	-0.18	1.00				
TEST_VOC	0.24	-0.09	1.00			
PSICO_10	-0.15	0.16	-0.09	1.00		
INCOME	0.32	-0.43	0.21	-0.12	1.00	
SUPERVISION	0.18	-0.21	0.07	-0.09	0.15	-1.00
SEX	-0.05	-0.12	-0.11	-0.09	-0.02	0.28
PSICO_5	-0.05	0.04	0.03	0.16	0.00	-0.03
MOTHER_READ	0.22	-0.14	0.20	-0.09	0.23	0.07
MALAISE	-0.17	0.14	-0.11	0.30	-0.18	-0.11
PARENTS_EDUC	0.48	-0.11	0.26	-0.15	0.53	0.17
FATHER_READ	0.33	-0.16	0.18	-0.11	0.31	0.11

	SEX	PSICO_5	MOTHER_READ	MALAISE	PARENTS_EDUC	FATHER_READ
SEX	1.00					
PSICO_5	-0.03	1.0				
MOTHER_READ	0.01	0.00	1.00			
MALAISE	0.00	0.18	-0.15	1.00		
PARENTS_EDUC	-0.01	-0.03	0.34	-0.24	1.00	
FATHER_READ	-0.01	-0.02	0.45	-0.14	0.36	1.00

---

[48] Education variable is children's educational level at age 30; Psico_10 variable is children's psychological problems at age 10, Income variable is family income at age 10; Supervision is parental supervision at age 10; Malaise is mother's malaise at age 5; Mother_read variable is mother reads to the child last week at age 5; Father_read variable is father reads to the child last week at age 5; Psico_5 variable is children's psychological problems at age 5; Test_Voc variable is vocabulary test at age 5; Parents_educ variable is highest parental education

1.1.2 Main model mediating variables of the effect of parental divorce: direct beta and gamma effects, standards errors and t-values

```
Chi-Square = 10.90 d.f. = 29, P-value =1.00, CFI=1, GFI=1,  RMSEA = .0000.
N=7967.


BETA

           EDUCATION  DIVORCE   TEST_VOC  PSICO_10  INCOME    SUPERVISION
           --------   --------  --------  --------  --------  --------
EDUCATION    - -      -0.07      0.09     -0.07      0.02      0.09
                     (0.03)    (0.01)    (0.02)    (0.03)    (0.01)
                     -2.32      6.09     -2.75      0.70      7.28
DIVORCE      - -       - -       - -       - -       - -       - -

TEST_VOC     - -       - -       - -       - -       - -       - -

PSICO_10     - -       0.07     -0.04      - -      -0.00     -0.01
                     (0.01)    (0.14)              (0.13)    (0.02)
                      2.74     -0.31                         -0.37

INCOME       - -      -0.37      - -       - -       - -       - -
                     (0.01)
                    -11.41

SUPERVISION  - -      -0.16     -0.05      - -      -0.13      - -
                     (0.02)    (0.01)              (0.12)
                      4.18     -3.62
GAMMA

            SEX      PSICO_5   MOTHER_READ MALAISE  PARENTS_EDUC FATHER_READ
           --------  --------  --------    --------  --------     --------
EDUCATION  -0.07     -0.02     -0.01       -0.03      0.35         0.16
          (0.01)    (0.03)    (0.02)      (0.03)    (0.03)       (0.02)
          -4.53     -0.85     -0.70       -0.90     13.01         9.09
DIVORCE    -0.12      0.01     -0.07        0.11     -0.03        -0.10
          (0.03)    (0.00)    (0.04)      (0.01)    (0.03)       (0.04)
          -4.13      2.63     -1.85        9.55     -0.91        -2.76

TEST_VOC   -0.11      0.04      0.11       -0.04      0.20         0.05
          (0.01)    (0.08)    (0.01)      (0.05)    (0.02)       (0.01)
         -12.69      0.47      8.17       -0.93     12.34         4.57
PSICO_10   -0.08      0.13       - -        0.24       - -        -0.02
          (0.02)    (0.52)                (0.25)                 (0.01)
          -4.34      0.26                  0.93                  -1.87

INCOME     -0.06       - -       - -        0.31      0.52         0.10
          (0.01)                          (0.27)    (0.07)       (0.02)
          -4.49                            1.13      7.67         5.26

SUPERVISION 0.27     -0.00      0.04        0.06     -0.11        -0.05
          (0.01)    (0.01)    (0.02)      (0.03)    (0.03)       (0.02)
          18.45     -0.13      1.98        2.20     -3.93        -2.56
```

1.2. Multigroup analysis beta and gamma effects, standards errors and t-values

1.2.1 Correlation Matrix

Correlation Matrix Divorce Group

```
Data ng=2 ni=11 no=436 ma=pm
```

	EDUCATION	PSICO_10	INCOME	SUPERVISION	SEX	PSICO_5
EDUCATION	1.00					
PSICO_10	-0.24	1.00				
INCOME	0.16	-0.07	1.00			
SUPERVISION	0.10	0.04	0.09	1.00		
SEX	0.02	-0.17	0.16	0.31	1.00	
PSICO_5	-0.13	0.19	0.08	-0.02	-0.06	1.00
MOTHER_READ	0.08	-0.06	0.16	-0.05	0.03	0.07
FATHER_READ	0.25	-0.07	0.05	0.01	-0.07	0.00
MALAISE	-0.21	0.35	-0.14	-0.01	-0.01	0.16
PARENTS_EDUC	0.45	-0.12	0.31	0.06	0.06	-0.07
TEST_VOC	0.19	-0.07	0.02	-0.08	-0.13	-0.01

	MOTHER_READ	FATHER_READ	MALAISE	PARENTS_EDUC	TEST_VOC
MOTHER_READ	1.00				
FATHER_READ	0.45	1.00			
MALAISE	-0.07	-0.10	1.00		
PARENTS_EDUC	0.35	0.33	-0.18	1.00	
TEST_VOC	0.19	0.25	-0.13	0.27	1.00

Correlation Matrix intact group

	EDUCATION	PSICO_10	INCOME	SUPERVISION	SEX	PSICO_5
EDUCATION	1.00					
PSICO_10	-0.14	1.00				
INCOME	0.32	-0.11	1.00			
SUPERVISION	0.17	-0.09	0.14	1.00		
SEX	-0.06	-0.08	-0.04	0.27	1.00	
PSICO_5	-0.04	0.15	0.00	-0.03	-0.03	1.00
MOTHER_READ	0.23	-0.09	0.23	0.07	0.01	0.00
FATHER_READ	0.33	-0.11	0.32	0.11	-0.01	-0.02
MALAISE	-0.17	0.29	-0.17	-0.11	0.01	0.18
PARENTS_EDUC	0.48	-0.15	0.55	0.17	-0.01	-0.03
TEST_VOC	0.23	-0.09	0.21	0.07	-0.12	0.03

```
         Correlation Matrix
```

	MOTHER_READ	FATHER_READ	MALAISE	PARENTS_EDUC	TEST_VOC
MOTHER_READ	1.00				
FATHER_READ	0.45	1.00			
MALAISE	-0.15	-0.14	1.00		
PARENTS_EDUC	0.34	0.36	-0.25	1.00	
TEST_VOC	0.20	0.17	-0.11	0.26	1.00

1.2.3 Multigroup analysis: beta and gamma effects, standards errors and t-values of the divorce group

```
Data ng=2 ni=11 no=436 ma=pm
Chi-Square = 19.32 d.f. = 29, P-value =1.00, CFI=1 , GFI=1,  RMSEA = .0000.
N=7967.
```

BETA

	EDUCATION	PSICO_10	INCOME	SUPERVISION
	--------	--------	--------	--------
EDUCATION	- -	-0.16	0.04	0.08
		(0.04)	(0.04)	(0.04)
		-3.68	0.83	1.93
PSICO_10	- -	- -	0.00	0.10
			(0.05)	(0.05)
			-0.01	2.21
INCOME	- -	- -	- -	- -
SUPERVISION	- -	- -	-0.04	- -
			(0.05)	
			-0.91	

	SEX	PSICO_5	MOTHER_READ	FATHER_READ	MALAISE	PARENTS_EDUC
	--------	--------	--------	--------	--------	--------
EDUCATION	-0.05	-0.06	-0.14	0.14	-0.05	0.39
	(0.04)	(0.04)	(0.05)	(0.05)	(0.04)	(0.05)
	-1.09	-1.45	-2.89	2.98	-1.15	8.19
PSICO_10	-0.19	0.13	-0.01	-0.04	0.32	-0.03
	(0.05)	(0.04)	(0.05)	(0.05)	(0.05)	(0.05)
	-4.08	2.84	-0.23	-0.71	7.10	-0.60
INCOME	0.14	0.12	0.08	-0.08	-0.10	0.29
	(0.04)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)
	3.06	2.65	1.52	-1.63	-2.25	5.97
SUPERVISION	0.30	- -	-0.12	0.08	-0.00	0.06
	(0.05)		(0.05)	(0.05)	(0.05)	(0.05)
	6.56		-2.22	1.44	-0.08	1.15

	TEST_VOC

EDUCATION	0.05
	(0.04)
	1.21
PSICO_10	- -
INCOME	- -
SUPERVISION	-0.06
	(0.05)
	-1.19

1.2.4 Multigroup analysis: beta and gamma effects, standards errors and t-values of the intact group

```
Data ng=2 ni=11 no=7530 ma=pm

            EDUCATION   PSICO_10   INCOME    SUPERVISION
            --------    --------   --------   --------
EDUCATION   - -         -0.05       0.04       0.10
                        (0.01)     (0.01)     (0.01)
                        -4.72       3.32       9.34

PSICO_10    - -         - -        -0.03      -0.03
                                   (0.01)     (0.01)
                                   -1.90      -2.38

INCOME      - -         - -         - -        - -

SUPERVISION - -         - -        -0.06       - -
                                   (0.01)
                                   -4.43

GAMMA

              SEX    PSICO_5  MOTHER_READ  FATHER_READ MALAISE PARENTS_EDUC
            --------  --------  --------    --------   --------  --------
EDUCATION   -0.07    -0.02      0.00        0.16       -0.01      0.35
            (0.01)   (0.01)    (0.01)      (0.01)      (0.01)    (0.01)
            -6.67    -2.12     -0.25       13.88       -1.37     27.44

PSICO_10    -0.07     0.10     -0.01       -0.04        0.25     -0.05
            (0.01)   (0.01)    (0.01)      (0.01)      (0.01)    (0.01)
            -6.50     9.36     -0.49       -3.08       21.58     -3.90

INCOME      -0.03     0.02     -0.01        0.14       -0.04      0.49
            (0.01)   (0.01)    (0.01)      (0.01)      (0.01)    (0.01)
            -3.43     2.49     -0.58       12.90       -3.68     45.99

SUPERVISION  0.28     - -      -0.03        0.05       -0.06      0.10
            (0.01)            (0.01)      (0.01)      (0.01)    (0.01)
            25.79             -2.19        4.19       -5.79      7.52

            TEST_VOC
            --------
EDUCATION    0.09
            (0.01)
             8.45

PSICO_10     - -

INCOME       - -

SUPERVISION  0.06
            (0.01)
             4.90
```

1.3 Multigroup analysis: Income groups

1.3.1 Correlation Matrix

Correlation Matrix High Income Group

```
Data ng=3 ni=9 no=2445 ma=pm

        Correlation Matrix

          EDUCATION   D51016   TEST_VOC     SEX    MOTHER_READ  FATHER_READ
          --------  --------  --------  --------   --------   --------
EDUCATION    1.00
DIVORCE      0.19      1.00
TEST_VOC    -0.07     -0.03      1.00
SEX         -0.06     -0.06     -0.11      1.00
MOTHER_READ  0.17      0.09     -0.13      0.03      1.00
FATHER_READ -0.06      0.00      0.18      0.03     -0.09      1.00
MALAISE     -0.05     -0.02      0.12      0.03     -0.24      0.49
PSICO_5     -0.10     -0.03      0.23     -0.02     -0.18      0.27
PARENTS_EDUC 0.29      0.18     -0.08     -0.03      0.15     -0.14


          MALAISE    PSICO_5   PARENTS_EDUC
          --------  --------  --------
MALAISE      1.00
PSICO_5      0.26      1.00
PARENTS_EDUC -0.09    -0.13      1.00
```

Correlation Matrix Medium Income Group

```
Data ng=3 ni=9 no=3777 ma=pm

        Correlation Matrix

          EDUCATION   DIVORCE  TEST_VOC     SEX    MOTHER_READ FATHER_READ
          --------  --------  --------  --------   --------   --------
EDUCATION    1.00
DIVORCE      0.12      1.00
TEST_VOC    -0.09      0.04      1.00
SEX         -0.06     -0.01     -0.08      1.0
MOTHER_READ  0.13      0.09     -0.07     -0.09      1.00
FATHER_READ -0.08     -0.01      0.17     -0.01     -0.09      1.00
MALAISE     -0.09     -0.03      0.13      0.01     -0.10      0.40
PSICO_5     -0.13     -0.05      0.18     -0.04     -0.12      0.19
PARENTS_EDUC 0.27      0.18     -0.08     -0.01      0.05     -0.15


          MALAISE   PSICO_5   PARENTS_EDUC
          --------  --------  --------
MALAISE      1.00
PSICO_5      0.24      1.00
PARENTS_EDUC -0.11    -0.13      1.00
```

Correlation Matrix Low Income Group

```
Data ng=3 ni=9 no=2445 ma=pm

        Correlation Matrix

           EDUCATION  DIVORCE   TEST_VOC    SEX    MOTHER_READ FATHER_READ
           --------  --------  --------  --------  --------   --------
EDUCATION    1.00
DIVORCE     -0.17      1.00
TEST_VOC    -0.09      0.04      1.00
SEX         -0.12     -0.04     -0.12      1.00
MOTHER_READ  0.22      0.00     -0.02     -0.18      1.00
FATHER_READ -0.10      0.04      0.22     -0.01     -0.16       1.00
MALAISE     -0.15     -0.03      0.19     -0.01     -0.09       0.46
PSICO_5     -0.19     -0.07      0.23     -0.06     -0.18       0.21
PARENTS_EDUC 0.34      0.19     -0.13      0.03      0.22      -0.11


           MALAISE    PSICO_5  PARENTS_EDUC
           --------  --------  --------
MALAISE      1.00
PSICO_5      0.35      1.00
PARENTS_EDUC -0.12    -0.17      1.00
```

1.3.2 Multigroup analysis: beta and gamma effects, standards errors and t-values of the high income group[49]

Chi-Square=0.00, df=63, P-value=1.00000, RMSEA=0.000

```
BETA

           EDUCATION  DIVORCE   TEST_VOC
           --------  --------  --------
EDUCATION    - -      -0.14      0.09
                     (0.02)    (0.02)
                     -8.07      5.33
DIVORCE      - -       - -       - -

TEST_VOC     - -       - -       - -
```

```
        GAMMA
          SEX    MOTHER_READ FATHER_READ MALAISE  PSICO_5  PARENTS_EDUC
        --------  --------  --------  --------  --------  -------
EDUCATION -0.05     0.11     -0.01      0.02     -0.04      0.24
         (0.02)    (0.02)    (0.02)    (0.02)    (0.02)    (0.02)
         -2.88      5.54     -0.46      0.91     -2.07     12.24

DIVORCE  -0.06      0.07      0.03      0.00     -0.01      0.18
         (0.02)    (0.02)    (0.02)    (0.02)    (0.02)    (0.02)
         -3.02      3.45      1.49     -0.06     -0.42      8.66

TEST_VOC -0.11     -0.08      0.12      0.00      0.18     -0.04
         (0.02)    (0.02)    (0.02)    (0.02)    (0.02)    (0.02)
         -5.72     -3.89      5.22     -0.03      8.74     -1.79
```

---

[49] There are significant group differences between the high income group and the low one (x^2= 4.72, df=1, p <0.05,). There are not significant group differences between the medium and low income groups (x^2= 0.80, df=1) and between the high income group and the medium one (x^2= 2.15, df=1).

1.3.3 Multigroup analysis: beta and gamma effects, standards errors and t-values of the medium income group

```
Chi-Square=0.00, df=63, P-value=1.00000, RMSEA=0.000
```

```
        BETA

            EDUCATION   DIVORCE    TEST_VOC
            --------   --------   --------
EDUCATION     - -       -0.11      -0.03
                       (0.02)     (0.02)
                       -7.19      -1.72

DIVORCE       - -        - -        - -

TEST_VOC      - -        - -        - -
```

```
        GAMMA

            SEX      MOTHER_READ  FATHER_READ  MALAISE   PSICO_5   PARENTS_EDUC
            --------   --------   --------   --------   --------   --------
EDUCATION   -0.11       0.11       0.01       -0.07     -0.10        0.29
           (0.02)      (0.02)     (0.02)     (0.02)    (0.02)      (0.02)
           -5.95        5.61       0.33       -3.10     -4.70       14.61

DIVORCE    -0.05       -0.05       0.08       -0.03     -0.06        0.20
           (0.02)      (0.02)     (0.02)     (0.02)    (0.02)      (0.02)
           -2.62       -2.39       3.38       -1.20     -2.72        9.73
TEST_VOC   -0.10        0.04       0.16        0.05      0.17       -0.08
           (0.02)      (0.02)     (0.02)     (0.02)    (0.02)      (0.02)
           -5.01        1.97       7.29        2.33      8.14       -4.12
```

1.3.4 Multigroup analysis: beta and gamma effects, standards errors and t-values of the Low income group

```
Chi-Square=0.00, df=63, P-value=1.00000, RMSEA=0.000BETA
```

```
        BETA

            EDUCATION   DIVORCE    TEST_VOC
            --------   --------   --------
EDUCATION     - -       -0.09      -0.05
                       (0.02)     (0.02)
                        4.78      -3.22

DIVORCE       - -        - -        - -

TEST_VOC      - -        - -        - -
```

```
        GAMMA
            SEX      MOTHER_READ  FATHER_READ  MALAISE   PSICO_5   PARENTS_EDUC
            --------   --------   --------   --------   --------   --------
EDUCATION   -0.06       0.09       0.00       -0.03     -0.07        0.23
           (0.02)      (0.02)     (0.02)     (0.02)    (0.02)      (0.02)
           -3.78        5.45       0.15       -1.91     -4.60       14.64

DIVORCE     0.00        0.08       0.03        0.00     -0.02        0.18
           (0.02)      (0.02)     (0.02)     (0.02)    (0.02)      (0.02)
           -0.04        4.74       1.52       -0.26     -1.39       11.05
TEST_VOC   -0.08       -0.05       0.12        0.04      0.13       -0.04
           (0.02)      (0.02)     (0.02)     (0.02)    (0.02)      (0.02)
           -5.02       -3.02       6.84        2.11      8.16       -2.6
```

Analyses 2: Listwise solution

These analyses have been done using the sample that I used in the paper but I have used the listwise deletion solution.

2.1 Main model mediating variables of the effect of parental divorce

2.1.1 Correlation Matrix

```
Data ni=12 no= 4850 ma=pm

        Correlation Matrix

          EDUCATION  DIVORCE  TEST_VOC  PSICO_10  INCOME   SUPERVISION
          --------  --------  --------  --------  --------  --------
EDUCATION    1.00
DIVORCE     -0.15      1.0
TEST_VOC     0.21     -0.09     1.00
PSICO_10    -0.14      0.11    -0.07     1.00
INCOME       0.29     -0.39     0.17    -0.12     1.00
SUPERVISION  0.16     -0.15     0.08    -0.09     0.14     1.00
SEX         -0.04     -0.03    -0.11    -0.06    -0.01     0.22
PSICO_5     -0.07      0.00    -0.03     0.20    -0.02    -0.04
MOTHER_READ  0.25     -0.08     0.19    -0.08     0.22     0.07
MALAISE     -0.16      0.12    -0.10     0.27    -0.17    -0.11
PARENTS_EDUC 0.45     -0.06     0.24    -0.14     0.47     0.16
FATHER_READ  0.21     -0.12     0.14    -0.07     0.22     0.08

             SEX     PSICO_5 MOTHER_READ MALAISE PARENTS_EDUC FATHER_READ
          --------  --------  --------  --------  --------  --------
SEX          1.00
PSICO_5     -0.02      1.00
MOTHER_READ -0.01     -0.07     1.00
MALAISE      0.00      0.18    -0.18     1.00
PARENTS_EDUC-0.01     -0.07     0.31    -0.24     1.00
FATHER_READ  0.00     -0.06     0.47    -0.12     0.31     1.00
```

2.1.2 Main model mediating variables of the effect of parental divorce: beta and gamma direct effects, standards errors and t-values

```
Chi-Square=0.09, df=26, P-value=1.00000, RMSEA=0.000
```

BETA

	EDUCATION	DIVORCE	TEST_VOC	PSICO_10	INCOME	SUPERVISION
	--------	--------	--------	--------	--------	--------
EDUCATION	- -	-0.08	0.08	-0.05	0.02	0.08
		(0.04)	(0.02)	(0.02)	(0.04)	(0.02)
		-2.19	4.23	-2.04	0.43	5.23
DIVORCE	- -	- -	- -	- -	- -	- -
TEST_VOC	- -	- -	- -	- -	- -	- -
PSICO_10	- -	0.01	-0.02	- -	-0.19	-0.03
		(0.03)	(0.21)		(0.10)	(0.02)
		0.47	-0.11		-1.87	-1.63
INCOME	- -	-0.32	- -	- -	- -	- -
		(0.02)				
		-13.48				
SUPERVISION	- -	-0.13	0.06	- -	-0.01	- -
		(0.04)	(0.02)		(0.04)	
		-3.55	3.66		-0.14	

GAMMA

	SEX	PSICO_5	MOTHER_READ	FATHER_READ	MALAISE	PARENTS_EDUC
	--------	--------	--------	--------	--------	--------
EDUCATION	-0.05	-0.02	0.10	0.00	0.36	0.02
	(0.02)	(0.03)	(0.02)	(0.03)	(0.02)	(0.02)
	-2.93	-0.73	4.01	0.05	17.22	0.75
DIVORCE	-0.03	-0.03	-0.02	0.11	0.00	-0.09
	(0.04)	(0.01)	(0.05)	(0.01)	(0.04)	(0.05)
	-0.84	-4.82	-0.32	7.99	-0.11	-1.90
TEST_VOC	-0.11	-0.01	0.11	-0.04	0.18	0.03
	(0.01)	(0.06)	(0.02)	(0.07)	(0.02)	(0.01)
	-9.82	-0.13	6.93	-0.53	9.24	1.80
PSICO_10	-0.05	0.15	- -	0.13	- -	0.01
	(0.03)	(0.51)		(0.36)		(0.02)
	-1.86	0.29		0.38		0.30
INCOME	-0.02	- -	- -	-0.41	0.35	0.02
	(0.01)			(0.17)	(0.05)	(0.02)
	-1.34			-2.40	7.07	1.20
SUPERVISION	0.22	-0.01	-0.00	-0.05	0.12	0.01
	(0.02)	(0.01)	(0.03)	(0.03)	(0.02)	(0.02)
	12.32	-1.31	-0.08	-2.12	5.47	0.53

2.1.3 Main model: beta total effects, standards errors and t-values

```
        Total Effects of Y on Y

           EDUCATION    DIVORCE   TEST_VOC   PSICO_10    INCOME SUPERVISION
           --------   --------   --------   --------   --------   --------
EDUCATION    - -        -0.10       0.09      -0.05       0.03      -0.08
                       (0.03)     (0.02)     (0.02)     (0.04)     (0.02)
                        -3.29       5.25      -2.04       0.67      -5.31

DIVORCE      - -        - -         - -        - -        - -        - -

TEST_VOC     - -        - -         - -        - -        - -        - -

PSICO_10     - -         0.08      -0.02       - -       -0.19       0.03
                       (0.03)     (0.21)                (0.10)     (0.02)
                        2.32      -0.12                 -1.87       1.63

INCOME       - -        -0.32       - -        - -        - -        - -
                       (0.02)
                       -13.48

SUPERVISION  - -         0.13      -0.06       - -        0.01       - -
                       (0.03)     (0.02)                (0.04)
                        4.27      -3.66                  0.14
```

2.2 Multigroup analysis beta and gamma effects, standards errors and t-values

2.2.1 Correlation Matrix

Correlation Matrix Divorce Group

```
Data ng=2 ni=11 no=232 ma=pm

        Correlation Matrix

           EDUCATION   PSICO_10    INCOME  SUPERVISION     SEX     PSICO_5
           --------   --------   --------   --------   --------   --------
EDUCATION    1.00
PSICO_10    -0.21       1.00
INCOME       0.08      -0.04       1.00
SUPERVISION  0.10       0.03       0.05       1.00
SEX         -0.03      -0.14       0.13       0.25       1.00
PSICO_5     -0.15       0.35       0.06      -0.03      -0.11       1.00
MOTHER_READ -0.01      -0.09       0.08      -0.04       0.03      -0.03
FATHER_READ  0.18       0.00       0.00       0.01      -0.11      -0.05
MALAISE     -0.16       0.33      -0.16      -0.01       0.00       0.31
PARENTS_EDUC 0.38      -0.06       0.25       0.05      -0.01      -0.06
TEST_VOC     0.17      -0.01      -0.02       0.02      -0.13      -0.03

        Correlation Matrix

           MOTHER_READ FATHER_READ  MALAISE  PARENTS_EDUC TEST_VOC
           --------   --------   --------   --------   --------
MOTHER_READ  1.00
FATHER_READ  0.34       1.00
MALAISE      0.00      -0.12       1.00
PARENTS_EDUC 0.29       0.25      -0.13       1.00
TEST_VOC     0.22       0.28      -0.10       0.25       1.00
```

Correlation Matrix intact group

```
Data ng=2 ni=11 no=4500 ma=pm
```

```
              EDUCATION  PSICO_10INCOME   SUPERVISION   SEX      PSICO_5
              --------   --------  --------  --------    --------  --------
EDUCATION      1.00
PSICO_10      -0.13       1.00
INCOME         0.29      -0.11      1.00
SUPERVISION  -0.16        0.09     -0.14      1.00
SEX           -0.04      -0.05     -0.02      0.22       1.00
PSICO_5       -0.07       0.20     -0.03     -0.04      -0.01      1.00
MOTHER_READ   0.27       -0.08      0.22      0.07      -0.01     -0.07
FATHER_READ   0.21       -0.07      0.22      0.08       0.01     -0.06
MALAISE       -0.15       0.27     -0.16     -0.11       0.00      0.19
PARENTS_EDUC  0.45       -0.15      0.49      0.16      -0.01     -0.07
TEST_VOC      0.21       -0.08      0.17      0.08      -0.11     -0.03
```

```
              MOTHER_READ FATHER_READ  MALAISE  PARENTS_EDUC TEST_VOC
              --------   --------   --------   --------   --------
MOTHER_READ    1.00
FATHER_READ    0.48       1.00
MALAISE       -0.19      -0.12       1.00
PARENTS_EDUC   0.31       0.31      -0.25       1.00
TEST_VOC       0.19       0.13      -0.10       0.23       1.00
```

2.2.2 Multigroup analysis: beta and gamma effects, standards errors and t-values of the divorce group[50]

```
Data ng=2 ni=11 no=232 ma=pm
Chi-Square=50.97, df=73, P-value=0.97677, RMSEA=0.000
```

```
            BETA
            EDUCATION  PSICO_10   INCOME    SUPERVISION
            --------   --------   --------   --------
EDUCATION     - -       -0.20      0.00       0.09
                       (0.06)     (0.06)     (0.06)
                       -3.24      -0.01       1.55

PSICO_10      - -        - -       0.00       0.07
                                  (0.06)     (0.06)
                                   0.04       1.21

INCOME        - -        - -        - -        - -

SUPERVISION   - -        - -       0.02        - -
                                  (0.07)
                                   0.24
```

---

[50] There are significant group differences for psychological problems (x^2= 5.40, df=1, p <0.05). There are not significant group difference for income (x^2=0.89) and supervision (x^2=0.02).

```
GAMMA

              SEX      PSICO_5  MOTHER_READ FATHER_READ MALAISE  PARENTS_EDUC
           --------  --------  --------  --------  --------  --------
EDUCATION    -0.05     - -       -0.19      0.13     -0.02      0.36
            (0.06)             (0.06)    (0.06)    (0.06)    (0.06)
            -0.76              -2.94      1.99     -0.36      5.60


PSICO_10     -0.13     0.26      - -       - -       0.25       - -
            (0.06)   (0.06)                       (0.06)
            -2.05     4.11                         3.97


INCOME        0.14     0.14      0.04     -0.08     -0.19      0.24
            (0.06)   (0.07)    (0.07)    (0.07)    (0.07)    (0.07)
             2.22     2.18      0.60     -1.13     -2.81      3.67


SUPERVISION   0.27     - -      -0.09      0.04      0.01      0.05
            (0.06)             (0.07)    (0.07)    (0.07)    (0.07)
             4.09              -1.23      0.53      0.22      0.72


GAMMA

              TEST_VOC
           --------
EDUCATION     0.07
            (0.06)
             1.15

PSICO_10      - -

INCOME        - -

SUPERVISION   0.06
            (0.07)
             0.83
```

2.2.3 Multigroup analysis: beta and gamma effects, standards errors and t-values of the intact group

```
Data ng=2 ni=11 no=4500 ma=pm
Chi-Square=50.97, df=73, P-value=0.97677, RMSEA=0.000


       BETA

            EDUCATION  PSICO_10  INCOME   SUPERVISION
           --------  --------  --------  --------
EDUCATION     - -      -0.05      0.06      0.08
                     (0.01)    (0.01)    (0.01)
                     -3.72      4.01     -6.18


PSICO_10      - -       - -      -0.07     -0.05
                               (0.01)    (0.01)
                               -4.64     -3.07


INCOME        - -       - -       - -       - -


SUPERVISION   - -       - -       0.07       - -
                               (0.02)
                                4.25
```

```
        GAMMA

                 SEX      PSICO_5   MOTHER_READ FATHER_READ MALAISE  PARENTS_EDUC
               --------  --------   --------   --------   --------  --------
EDUCATION       -0.05     - -         0.11       0.01      -0.01       0.34
               (0.01)               (0.02)     (0.02)     (0.01)     (0.02)
                -3.76                 7.50       0.74      -0.40      21.53


PSICO_10        -0.04      0.15       - -        - -        0.22       - -
               (0.01)    (0.01)                            (0.01)
                -2.78     10.72                            15.23


INCOME           - -       - -        - -        0.08      -0.04       0.46
                                                (0.01)     (0.01)     (0.01)
                                                 5.60      -2.72      32.58


SUPERVISION     -0.22      - -         0.00       0.02      -0.07       0.09
               (0.01)               (0.02)     (0.02)     (0.01)     (0.02)
               -15.65                 0.00       1.00      -4.40       5.21



        GAMMA

                TEST_VOC
               --------
EDUCATION        0.08
               (0.01)
                 6.14

PSICO_10         - -

INCOME           - -

SUPERVISION      0.07
               (0.01)
                 4.43
```

2.3 Multigroup analysis: Income groups

2.3.1 Correlation Matrix
Correlation Matrix High Income Group

```
Data ng=3 ni=9 no=1736 ma=pm

        Correlation Matrix

             EDUCATION  Divorce   Test_voc    SEX      PSICO_5   MOTHER_R
             --------  --------   --------  --------   --------  --------
EDUCATION       1.00
Divorce        -0.19      1.00
Test_voc        0.23     -0.17      1.00
SEX            -0.02      0.11     -0.12      1.00
PSICO_5        -0.09      0.14     -0.08     -0.07      1.00
MOTHER_R        0.28     -0.13      0.18      0.03     -0.07      1.00
FATHER_R        0.22     -0.25      0.12      0.02     -0.06      0.45
MALAISE        -0.12      0.11     -0.08     -0.03      0.33     -0.14
Parents_educ    0.50     -0.11      0.23     -0.04     -0.15      0.32



        Correlation Matrix
```

```
             FATHER_R    MALAISE   Parents_educ
             --------   --------   --------
FATHER_R       1.00
MALAISE       -0.09       1.00
Parents_educ   0.32      -0.20        1.00
```

Correlation Matrix Medium Income Group

Data ng=3 ni=9 no=1616 ma=pm

```
        Correlation Matrix

            EDUCATION   Divorce   Test_voc    SEX     PSICO_5   MOTHER_Read
            --------   --------   --------  --------  --------  --------
 EDUCATION     1.00
 Divorce      -0.07       1.00
 Test_voc      0.17      -0.10       1.00
 SEX          -0.04      -0.02      -0.11      1.00
 PSICO_5      -0.11       0.15      -0.09     -0.07       1.00
 MOTHER_Read   0.19       0.01       0.15      0.00      -0.07       1.00
 FATHER_Read   0.16      -0.11       0.12     -0.04      -0.10       0.47
 MALAISE      -0.08       0.01      -0.07      0.00       0.42      -0.15
 PARENTS_EDUC  0.29       0.05       0.15      0.01      -0.10       0.21

        Correlation Matrix

            FATHER_Read MALAISE   PARENTS_EDUC
            --------   --------   --------
FATHER_Read    1.00
MALAISE       -0.12       1.00
PARENTS_EDUC   0.22      -0.16        1.00
```

Correlation Matrix Low Income Group

Data ng=3 ni=9 no=1736 ma=pm

```
            EDUCATION   Divorce   Test_voc    SEX     PSICO_5  MOTHER_READ
            --------   --------   --------  --------  --------  --------
EDUCATION      1.00
Divorce       -0.05       1.00
Test_voc       0.17       0.02       1.00
SEX           -0.03      -0.11      -0.08      1.00
PSICO_5       -0.12       0.02      -0.05     -0.07       1.00
MOTHER_READ    0.21       0.01       0.19     -0.02      -0.05       1.00
FATHER_READ    0.12      -0.03       0.14      0.05      -0.04       0.43
MALAISE       -0.16       0.08      -0.12     -0.02       0.27      -0.15
PARENTS_EDUC   0.37       0.16       0.21      0.04      -0.12       0.25

        Correlation Matrix

            FATHER_READ MALAISE   PARENTS_EDUC
            --------   --------   --------
FATHER_READ    1.00
MALAISE       -0.07       1.00
PARENTS_EDUC   0.19      -0.23        1.00
```

2.3.2 Multigroup analysis: beta and gamma effects, standards errors and t-values of the high income group[51]

```
Chi-Square=0.00, df=63, P-value=1.00000, RMSEA=0.000
```

```
          BETA

          EDUCATION  Divorce   Test_voc
          --------  --------  --------
EDUCATION    - -      -0.11      0.09
                     (0.02)    (0.02)
                     -5.23      4.27

Divorce      - -       - -       - -

Test_voc     - -       - -       - -
```

```
          GAMMA

            SEX     PSICO_5  MOTHER_R  FATHER_R   MALAISE  Parents_educ
          --------  --------  --------  --------  --------  --------
EDUCATION   0.01      0.01      0.12     -0.01      0.00      0.43
          (0.02)    (0.02)    (0.02)    (0.02)    (0.02)    (0.02)
            0.70      0.32      4.92     -0.37     -0.16     18.97

Divorce     0.12      0.12     -0.01     -0.24      0.05      0.00
          (0.02)    (0.02)    (0.03)    (0.03)    (0.02)    (0.03)
            5.37      5.04     -0.54     -8.99      1.86     -0.02

Test_voc   -0.12     -0.05      0.13      0.00     -0.02      0.18
          (0.02)    (0.02)    (0.03)    (0.03)    (0.02)    (0.03)
           -5.28     -1.96      4.74      0.08     -0.62      7.04
```

2.3.3 Multigroup analysis: beta and gamma effects, standards errors and t-values of the medium income group

```
Chi-Square=0.00, df=63, P-value=1.00000, RMSEA=0.000
BETA

          EDUCATION  Divorce   Test_voc
          --------  --------  --------
EDUCATION    - -      -0.06      0.10
                     (0.02)    (0.02)
                     -2.44      4.09

Divorce      - -       - -       - -

Test_voc     - -       - -       - -
```

---

[51] There are significant group differences, but at 10 per cent level, between the high income group and the medium one (x^2= 2.82, df=1, , p <0.10). There are not significant group differences between the high income group and the low one (x^2= 0.07, df=1) and between the low income group and the medium one (x^2= 1.98, df=1).

```
          GAMMA

              SEX     PSICO_5   MOTHER_R  FATHER_R  MALAISE  Parents_educ
            --------  --------  --------  --------  --------  --------
EDUCATION    -0.04     -0.06      0.10      0.04      0.01      0.24
            (0.02)    (0.03)    (0.03)    (0.03)    (0.03)    (0.02)
            -1.63     -2.36      3.70      1.45      0.52      9.86

Divorce      -0.02      0.17      0.07     -0.15     -0.06      0.08
            (0.02)    (0.03)    (0.03)    (0.03)    (0.03)    (0.03)
            -0.67      6.36      2.50     -5.28     -2.05      2.99

Test_voc     -0.12     -0.08      0.11      0.03      0.00      0.12
            (0.02)    (0.03)    (0.03)    (0.03)    (0.03)    (0.03)
            -4.76     -2.82      3.87      0.97      0.04      4.75
```

2.3.4 Multigroup analysis: beta and gamma effects, standards errors and t-values of the medium income group

```
Chi-Square=0.00, df=63, P-value=1.00000, RMSEA=0.000BETA

BETA
            EDUCATION  Divorce   Test_voc
            --------  --------  --------
EDUCATION    - -       -0.10      0.07
                      (0.02)    (0.02)
                      -4.66      3.17

Divorce      - -        - -        - -

Test_voc     - -        - -        - -


          GAMMA

              SEX     PSICO_5   MOTHER_R  FATHER_R  MALAISE  Parents_educ
            --------  --------  --------  --------  --------  --------
EDUCATION    -0.05     -0.06      0.11      0.00     -0.04      0.33
            (0.02)    (0.02)    (0.02)    (0.02)    (0.02)    (0.02)
            -2.29     -2.81      4.24     -0.01     -1.72     13.71

Divorce      -0.12      0.00      0.00     -0.06      0.12      0.20
            (0.02)    (0.02)    (0.03)    (0.03)    (0.02)    (0.02)
            -4.99      0.13     -0.06     -2.11      4.80      8.11

Test_voc     -0.09     -0.01      0.11      0.06     -0.06      0.16
            (0.02)    (0.02)    (0.03)    (0.03)    (0.02)    (0.02)
            -3.69     -0.44      4.30      2.20     -2.40      6.33
```

Analyses 3: Restricted Sample

This analysis are based on a restricted sample:

For the intact group, I only include cohort members that give information about their family structure at waves 1 (age 5), 2 (age 10) and 5 (age 30). For the divorce group, I only include those that give information about their family structure at wave 1 (age 5) and 2 (age 10). I use multiple imputation estimation to impute missing cases of the restricted sample.

3.1 Main model mediating variables of the effect of parental divorce

3.1.1 Correlation Matrix

```
Data ni=12 no= 5850 ma=pm

        Correlation Matrix

          EDUCATION  DIVORCE  TEST_VOC  PSICO_10   INCOME  SUPERVISION
          --------  --------  --------  --------  --------  -------
EDUCATION    1.00
DIVORCE     -0.20      1.00
TEST_VOC     0.21     -0.09     1.00
PSICO_10    -0.14      0.16    -0.09      1.00
INCOME       0.30     -0.45     0.18     -0.13      1.00
SUPERVISION  0.17     -0.22     0.06     -0.10      0.16      1.00
SEX         -0.03     -0.11    -0.10     -0.09      0.00      0.25
PSICO_5     -0.04      0.03     0.03      0.14      0.01     -0.03
MOTHER_READ  0.25     -0.09     0.20     -0.09      0.23      0.06
MALAISE     -0.16      0.14    -0.10      0.27     -0.16     -0.10
PARENTS_EDUC 0.45     -0.11     0.24     -0.15      0.50      0.17
FATHER_READ  0.21     -0.17     0.14     -0.08      0.23      0.09


               SEX    PSICO_5  MOTHER_READ  MALAISE  PARENTS_EDUC FATHER_READ
           --------  --------  --------  --------  --------  ------
SEX          1.00
PSICO_5     -0.04      1.00
MOTHER_READ  0.00     -0.01     1.00
MALAISE     -0.01      0.17    -0.16      1.00
PARENTS_EDUC 0.00     -0.03     0.32     -0.23      1.00
FATHER_READ  0.02     -0.02     0.48     -0.11      0.31      1.00
```

3.1.2 Main model mediating variables of the effect of parental divorce: beta and gamma direct effects, standards errors and t-values

```
Chi-Square=53.76, df=62, P-value=0.76258, RMSEA=0.000

 LISREL Estimates (Weighted Least Squares)

      BETA

          EDUCATION  DIVORCE  TEST_VOC  PSICO_10   INCOME  SUPERVISION
          --------  --------  --------  --------  --------  --------
EDUCATION    - -     -0.12      0.08     -0.04     -0.02      0.08
                    (0.04)    (0.02)    (0.03)    (0.08)    (0.01)
                    -3.14      5.16     -1.65     -0.22      5.42


DIVORCE      - -      - -       - -       - -       - -       - -

TEST_VOC     - -      - -       - -       - -       - -       - -

PSICO_10     - -      0.05     -0.06      - -      -0.12     -0.01
                    (0.02)    (0.19)             (0.12)    (0.02)
                     2.25     -0.32             -0.98     -0.57


INCOME       - -     -0.33      - -       - -       - -       - -
                    (0.02)
                    -13.42
SUPERVISION  - -     -0.20     -0.04      - -      -0.07      - -
                    (0.05)    (0.01)             (0.11)
                    -4.14     -2.60             -0.67
```

	SEX	PSICO_5	MOTHER_READ	FATHER_READ	MALAISE	PARENTS_EDUC
EDUCATION	-0.06	-0.02	0.08	-0.02	0.37	0.02
	(0.02)	(0.03)	(0.02)	(0.06)	(0.03)	(0.02)
	-3.35	-0.67	3.67	-0.29	12.84	0.80
DIVORCE	-0.10	0.01	0.01	0.12	-0.04	-0.15
	(0.03)	(0.00)	(0.04)	(0.01)	(0.03)	(0.04)
	-3.36	1.23	0.35	9.77	-1.43	-3.81
TEST_VOC	-0.10	0.04	0.12	-0.05	0.18	0.02
	(0.01)	(0.10)	(0.01)	(0.06	(0.02)	(0.01)
	-9.42	0.40	8.25	-0.84	10.32	1.93
PSICO_10	-0.08	0.07	- -	0.26	- -	-0.01
	(0.03)	(0.70)		(0.33)		(0.02)
	-2.79	0.10		0.79		-0.35
INCOME	-0.04	- -	- -	-0.61	0.33	0.00
	(0.01)			(0.17)	(0.05)	(0.0
	-3.11			-3.50	6.95	0.07
SUPERVISION	0.24	-0.01	-0.01	-0.09	0.15	0.01
	(0.02)	(0.02)	(0.02)	(0.08)	(0.04)	(0.02)
	13.64	-0.41	-0.51	-1.06	4.21	0.40

3.1.3 Main model: beta total effects, standards errors and t-values

	EDUCATION	DIVORCE	TEST_VOC	PSICO_10	INCOME	SUPERVISION
EDUCATION	- -	-0.13	0.09	-0.04	-0.02	-0.08
		(0.02)	(0.01)	(0.03)	(0.08)	(0.01)
		-6.01	5.99	-1.65	-0.22	-5.45
DIVORCE	- -	- -	- -	- -	- -	- -
TEST_VOC	- -	- -	- -	- -	- -	- -
PSICO_10	- -	0.09	-0.06	- -	-0.12	0.01
		(0.03)	(0.19)		(0.12)	(0.02)
		3.00	-0.32		-0.99	0.57
INCOME	- -	-0.33	- -	- -	- -	- -
		(0.02)				
		-13.42				
SUPERVISION	- -	0.17	-0.04	- -	0.07	- -
		(0.02)	(0.01)		(0.11	
		7.03	-2.60		0.67	

3.2 . Multigroup analysis beta and gamma effects, standards errors and t-values

3.2.1 Correlation Matrix

Correlation Matrix Divorce Group

```
Data ng=2 ni=11 no=436 ma=pm
```

	EDUCATION	PSICO_10	INCOME	SUPERVISION	SEX	PSICO_5
	--------	--------	--------	--------	--------	--------
EDUCATION	1.00					
PSICO_10	-0.24	1.00				
INCOME	0.16	-0.07	1.00			
SUPERVISION	0.10	0.04	0.09	1.00		
SEX	0.02	-0.17	0.16	0.31	1.00	
PSICO_5	-0.13	0.19	0.08	-0.02	-0.06	1.00
MOTHER_READ	0.08	-0.06	0.16	-0.05	0.03	0.07
FATHER_READ	0.25	-0.07	0.05	0.01	-0.07	0.00
MALAISE	-0.21	0.35	-0.14	-0.01	-0.01	0.16
PARENTS_EDUC	0.45	-0.12	0.31	0.06	0.06	-0.07
TEST_VOC	0.19	-0.07	0.02	-0.08	-0.13	-0.01

```
        Correlation Matrix
```

	MOTHER_READ	FATHER_READ	MALAISE	PARENTS_EDUC	TEST_VOC
	--------	--------	--------	--------	--------
MOTHER_READ	1.00				
FATHER_READ	0.45	1.00			
MALAISE	-0.07	-0.10	1.00		
PARENTS_EDUC	0.35	0.33	-0.18	1.00	
TEST_VOC	0.19	0.25	-0.13	0.27	1.00

Correlation Matrix intact group

```
Data ng=2 ni=11 no=5530 ma=pm
```

	EDUCATION	PSICO_10	INCOME	SUPERVISION	SEX	PSICO_5
	--------	--------	--------	--------	--------	--------
EDUCATION	1.00					
PSICO_10	-0.13	1.00				
INCOME	0.30	-0.11	1.00			
SUPERVISION	0.16	-0.10	0.14	1.00		
SEX	-0.03	-0.08	-0.03	0.25	1.00	
PSICO_5	-0.04	0.14	0.01	-0.03	-0.03	1.00
MOTHER_READ	0.25	-0.09	0.23	0.07	-0.01	-0.02
FATHER_READ	0.20	-0.08	0.22	0.08	0.02	-0.02
MALAISE	-0.15	0.26	-0.15	-0.10	-0.01	0.17
PARENTS_EDUC	0.45	-0.14	0.51	0.17	-0.01	-0.03
TEST_VOC	0.22	-0.09	0.19	0.07	-0.10	0.04

	MOTHER_READ	FATHER_READ	MALAISE	PARENTS_EDUC	TEST_VOC
	--------	--------	--------	--------	--------
MOTHER_READ	1.00				
FATHER_READ	0.48	1.00			
MALAISE	-0.16	-0.11	1.00		
PARENTS_EDUC	0.32	0.30	-0.23	1.00	
TEST_VOC	0.20	0.13	-0.10	0.24	1.00

3.2.2 Multigroup analysis: beta and gamma effects, standards errors and t-values of the divorce group[52]

```
Chi -Square=42.23, df=62, P-value=0.97428, RMSEA=0.000
```

```
          BETA

          EDUCATION  PSICO_10   INCOME    SUPERVISION
          --------   --------   --------   --------
EDUCATION    - -      -0.16      0.04       0.08
                     (0.04)     (0.04)     (0.04)
                     -3.68       0.83       1.93

PSICO_10     - -       - -       0.00       0.10
                                (0.05)     (0.05)
                                -0.01       2.21

INCOME       - -       - -        - -        - -

SUPERVISION  - -       - -       0.04        - -
                                (0.05)
                                 0.91
```

```
   GAMMA

            SEX     PSICO_5   MOTHER_READ FATHER_READ  MALAISE  PARENTS_EDUC
          --------  --------   --------    --------   --------   --------
EDUCATION  -0.05    -0.06      -0.14        0.14       -0.05      0.39
          (0.04)   (0.04)     (0.05)       (0.05)     (0.04)    (0.05)
          -1.09    -1.45      -2.89         2.98       -1.15      8.19

PSICO_10   -0.19     0.13      -0.01       -0.04        0.32     -0.03
          (0.05)   (0.04)     (0.05)       (0.05)     (0.05)    (0.05)
          -4.08     2.84      -0.23        -0.71        7.10     -0.60

INCOME      0.14     0.12       0.08       -0.08       -0.10      0.29
          (0.04)   (0.05)     (0.05)       (0.05)     (0.05)    (0.05)
           3.06     2.65       1.52        -1.63       -2.25      5.97

SUPERVISION 0.30      - -      -0.12        0.08       -0.00      0.06
          (0.05)              (0.05)       (0.05)     (0.05)    (0.05)
           6.56              -2.22         1.44       -0.08      1.15
```

```
GAMMA

          TEST_VOC
          -------
EDUCATION   0.05
           (0.04)
            1.21

PSICO_10    - -

INCOME      - -

SUPERVISIO -0.06
           (0.05)
           -1.19
```

[52] There are significant group differences for psychological problems (x^2= 6.63, df=1, p <0.05). There are not significant group difference for income (x^2=0.28) and supervision (x^2=0.01).

3.3 Multigroup analysis: beta and gamma effects, standards errors and t-values of the intact group

```
Chi -Square=42.23, df=62, P-value=0.97428, RMSEA=0.000

Data ng=2 ni=11 no=4500 ma=pm


 LISREL Estimates (Maximum Likelihood)

BETA

          EDUCATION   PSICO_10   INCOME   SUPERVISION
          --------   --------   --------   --------
EDUCATION    - -      -0.04       0.06       0.09
                     (0.01)     (0.01)     (0.01)
                     -3.52       4.42       7.06


PSICO_10     - -        - -      -0.04      -0.04
                                (0.02)     (0.01)
                                -2.98      -2.92


INCOME       - -        - -        - -        - -

SUPERVISION  - -        - -       0.08        - -
                                (0.01)
                                 5.04

 GAMMA

           SEX      PSICO_5   MOTHER_READ  FATHER_READ  MALAISE  PARENTS_EDUC
          --------  --------   --------    --------    --------   --------
EDUCATION   -0.05    -0.02       0.09        0.02       -0.01       0.34
           (0.01)   (0.01)     (0.01)      (0.01)      (0.01)     (0.01)
           -3.79    -1.65       6.29        1.53       -0.95      23.23


PSICO_10    -0.06     0.09      -0.02       -0.01        0.22      -0.05
           (0.01)   (0.01)     (0.02)      (0.01)      (0.01)     (0.02)
           -4.69     7.15      -1.05       -0.91       16.05      -3.42


INCOME      -0.02     0.03       0.05        0.05       -0.03       0.47
           (0.01)   (0.01)     (0.01)      (0.01)      (0.01)     (0.01)
           -2.02     2.31       3.57        4.06       -2.81      37.86


SUPERVISION  0.25      - -      -0.01        0.02       -0.06       0.10
           (0.01)              (0.02)      (0.01)      (0.01)     (0.02)
           19.77               -0.60        1.35       -4.43       6.47


           TEST_VOC
           --------
EDUCATION   0.09
           (0.01)
            7.21

PSICO_10     - -

INCOME       - -

SUPERVISION  0.05
           (0.01)
            3.73
```

Analyses 4: OECD income modified scale.

In these analyses, the sample is the same that I have used in the paper. But the continuous variable of family income is calculated using OECD modified equivalence scale.

4.1 Main model mediating variables of the effect of parental divorce

4.1.1 Correlation Matrix

```
Data ni=12 no= 8000 ma=pm
```

        Correlation Matrix

	EDUCATION	DIVORCE	TEST_VOC	PSICO_10	INCOME	SUPERVISION
EDUCATION	1.00					
DIVORCE	-0.15	1.00				
TEST_VOC	0.21	-0.08	1.00			
PSICO_10	-0.14	0.11	-0.07	1.00		
INCOME	0.28	-0.36	0.17	-0.11	1.00	
SUPERVISION	0.16	-0.18	0.07	-0.09	0.14	1.00
SEX	-0.04	-0.04	-0.10	-0.07	0.01	-0.23
PSICO_5	-0.07	0.00	-0.03	0.19	0.02	0.04
MOTHER_READ	0.25	-0.08	0.19	-0.08	-0.21	-0.07
MALAISE	-0.15	0.13	-0.10	0.27	0.16	0.10
PARENTS_EDUC	0.44	-0.07	0.24	-0.14	-0.46	-0.16
FATHER_READ	0.20	-0.11	0.13	-0.07	-0.22	-0.08

        Correlation Matrix

	SEX	PSICO_5	MOTHER_READ	MALAISE	PARENTS_EDUC	FATHER_READ
SEX	1.00					
PSICO_5	-0.02	1.00				
MOTHER_READ	0.00	-0.06	1.00			
MALAISE	0.00	0.18	-0.18	1.00		
PARENTS_EDUC	0.00	-0.06	0.32	-0.23	1.00	
FATHER_READ	0.01	-0.05	0.48	-0.12	0.30	1.00

4.1.2 Main model mediating variables of the effect of parental divorce: beta and gamma direct effects, standards errors and t-values

```
Chi-Square=0.13, df=26, P-value=1.00000, RMSEA=0.000

 LISREL Estimates (Weighted Least Squares)

          BETA
          EDUCATION  DIVORCE   TEST_VOC   PSICO_10    INCOME   SUPERVISION
          --------  --------   --------   --------   --------  --------
EDUCATION    - -     -0.08      0.09      -0.05       0.03      0.08
                    (0.03)     (0.01)     (0.02)     (0.02)    (0.01)
                    -2.90       5.80      -2.54       1.19      6.73


DIVORCE      - -      - -        - -        - -        - -       - -


TEST_VOC     - -      - -        - -        - -        - -       - -


PSICO_10     - -      0.02      -0.03       - -       -0.16     -0.03
                    (0.02)     (0.16)                (0.07)    (0.01)
                     0.80      -0.18                 -2.39     -2.26


INCOME       - -     -0.29       - -        - -        - -       - -
                    (0.02)
                    -16.11


SUPERVISION  - -     -0.15      0.05        - -       -0.00      - -
                    (0.03)     (0.01)                (0.02)
                    -5.86       4.00                 -0.13


              SEX     PSICO_5  MOTHER_READ MALAISE  PARENTS_EDUC FATHER_READ
            --------  --------  --------   --------   --------  --------
 EDUCATION   -0.06    -0.02      0.08      -0.02       0.37      0.02
            (0.02)    (0.03)    (0.02)     (0.06)     (0.03)    (0.02)
            -3.35     -0.67      3.67      -0.29      12.84      0.80


DIVORCE     -0.10      0.01      0.01       0.12      -0.04     -0.15
            (0.03)    (0.00)    (0.04)     (0.01)     (0.03)    (0.04)
            -3.36      1.23      0.35       9.77      -1.43     -3.81


TEST_VOC    -0.10      0.04      0.12      -0.05       0.18      0.02
            (0.01)    (0.10)    (0.01)     (0.06)     (0.02)    (0.01)
            -9.42      0.40      8.25      -0.84      10.32      1.93


PSICO_10    -0.08      0.07       - -       0.26        - -     -0.01
            (0.03)    (0.70)                (0.33)               (0.02)
            -2.79      0.10                 0.79                 -0.35


INCOME      -0.04       - -       - -      -0.61       0.33      0.00
            (0.01)                         (0.17)     (0.05)    (0.02)
            -3.11                          -3.50       6.95      0.07


SUPERVISION  0.24     -0.01     -0.01      -0.09       0.15      0.01
            (0.02)    (0.02)    (0.02)     (0.08)     (0.04)    (0.02)
            13.64     -0.41     -0.51      -1.06       4.21      0.40
```

4.2 . Multigroup analysis beta and gamma effects, standards errors and t-values

4.2.1 Correlation Matrix

Correlation Matrix Divorce Group

```
 Data ng=2 ni=11 no=436 ma=pm

        Correlation Matrix


            EDUCATION   PSICO_10   INCOME   SUPERVISION    SEX     PSICO_5
            --------   --------   --------   --------   --------   --------
EDUCATION     1.00
PSICO_10     -0.19       1.00
INCOME        0.10      -0.03       1.00
SUPERVISION   0.11       0.04       0.07       1.00
SEX          -0.04      -0.12       0.16       0.27       1.00
PSICO_5      -0.12       0.36       0.05      -0.06      -0.11       1.00
MOTHER_READ  -0.01      -0.07       0.12      -0.00       0.07      -0.02
FATHER_READ   0.17       0.02       0.02       0.01      -0.08      -0.02
MALAISE      -0.15       0.32      -0.17      -0.04      -0.03       0.26
PARENTS_EDUC  0.38      -0.07       0.27       0.08       0.03      -0.07
TEST_VOC      0.17      -0.01       0.00      -0.00      -0.15      -0.04


           MOTHER_READ  FATHER_READ  MALAISE  PARENTS_EDUC TEST_VOC
            --------   --------   --------   --------   -------
MOTHER_READ   1.00
FATHER_READ   0.40       1.00
MALAISE      -0.04      -0.14       1.00
PARENTS_EDUC  0.32       0.26      -0.16       1.00
TEST_VOC      0.19       0.28      -0.09       0.25       1.00
```

Correlation Matrix intact group

```
Data ng=2 ni=11 no=7530 ma=pm



            EDUCATION   PSICO_10   INCOME   SUPERVISION    SEX     PSICO_5
            --------   --------   --------   --------   --------   --------
EDUCATION     1.00
PSICO_10     -0.13       1.00
INCOME        0.29      -0.11       1.00
SUPERVISION   0.16      -0.10       0.13       1.00
SEX          -0.04      -0.06      -0.02       0.23       1.00
PSICO_5      -0.07       0.19      -0.03      -0.04      -0.01       1.00
MOTHER_READ   0.26      -0.08       0.22       0.08      -0.01      -0.06
FATHER_READ   0.20      -0.07       0.23       0.08       0.01      -0.05
MALAISE      -0.15       0.26      -0.16      -0.10       0.00       0.19
PARENTS_EDUC  0.44      -0.14       0.47       0.16       0.00      -0.06
TEST_VOC      0.21      -0.07       0.18       0.07      -0.10      -0.0
           MOTHER_READ  FATHER_READ  MALAISE  PARENTS_EDUC TEST_VOC
            --------   --------   --------   --------   --------
MOTHER_READ   1.00
FATHER_READ   0.48       1.00
MALAISE      -0.18      -0.12       1.00
PARENTS_EDUC  0.32       0.31      -0.23       1.00
TEST_VOC      0.19       0.12      -0.10       0.23       1.00
```

4.2.2 Multigroup analysis: beta and gamma effects, standards errors and t-values of the divorce group[53]

```
Chi-Square=46.32, df=62, P-value=0.93151, RMSEA=0.000


LISREL Estimates (Maximum Likelihood)


        BETA


           EDUCATION   PSICO_10   INCOME    SUPERVISION
           --------   --------   --------   --------
EDUCATION      - -      -0.18      0.02       0.10
                       (0.05)     (0.05)     (0.04)
                       -3.81       0.34       2.21


PSICO_10       - -       - -       0.01       0.09
                                  (0.05)     (0.04)
                                   0.30       1.94


INCOME         - -       - -       - -        - -


SUPERVISION    - -       - -       0.01       - -
                                  (0.05)
                                   0.15



        GAMMA


           SEX       PSICO_5   MOTHER_READ FATHER_READ  MALAISE   PARENTS_EDUC
           --------  --------  --------    --------    --------   --------
EDUCATION   -0.07     -0.03     -0.20       0.13       -0.01       0.37
           (0.05)    (0.05)    (0.05)      (0.05)      (0.05)     (0.05)
           -1.56     -0.63     -4.20        2.69       -0.21       7.82


PSICO_10    -0.09      0.28     -0.08       0.09        0.26      -0.01
           (0.05)    (0.04)    (0.05)      (0.05)      (0.05)     (0.05)
           -2.01      6.33     -1.69        1.79        5.63      -0.20


INCOME       0.15      0.13      0.05      -0.07       -0.17       0.25
           (0.05)    (0.05)    (0.05)      (0.05)      (0.05)     (0.05)
            3.35      2.84      1.05       -1.45       -3.55       5.17


SUPERVISION  0.27      - -      -0.06       0.03       -0.02       0.07
           (0.05)              (0.05)      (0.05)      (0.05)     (0.05)
            5.74              -1.23        0.60       -0.33       1.38


           TEST_VOC
           --------
EDUCATION    0.07
           (0.05)
            1.58


PSICO_10     - -


INCOME       - -


SUPERVISION  0.03
           (0.05)
            0.55
```

---

[53] There are significant group differences for psychological problems (x^2= 6.11, df=1, p <0.05). There are not significant group difference for income (x^2=1.74) and supervision (x^2=0.05).

4.2.3 Multigroup analysis: beta and gamma effects, standards errors and t-values of the intact group

```
Chi-Square=46.32, df=62, P-value=0.93151, RMSEA=0.000
```

```
BETA
```

	EDUCATION	PSICO_10	INCOME	SUPERVISION
	--------	--------	--------	--------
EDUCATION	- -	-0.05	0.08	0.09
		(0.01)	(0.01)	(0.01)
		-4.90	6.70	8.24
PSICO_10	- -	- -	-0.04	-0.05
			(0.01)	(0.01)
			-3.29	-3.96
INCOME	- -	- -	- -	- -
SUPERVISION	- -	- -	0.07	- -
			(0.01)	
			5.44	

```
GAMMA
```

	SEX	PSICO_5	MOTHER_READ	FATHER_READ	MALAISE	PARENTS_EDUC
	--------	--------	--------	--------	--------	--------
EDUCATION	-0.05	-0.02	0.10	0.01	0.00	0.33
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
	-4.89	-2.02	8.85	1.06	-0.30	26.77
PSICO_10	-0.05	0.14	0.00	-0.01	0.21	-0.05
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
	-4.78	12.71	-0.04	-0.46	18.29	-3.96
INCOME	-0.01	0.01	0.04	0.07	-0.04	0.43
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
	-1.40	1.23	3.44	6.09	-4.06	38.70
SUPERVISION	0.23	- -	0.00	0.02	-0.06	0.10
	(0.01)		(0.01)	(0.01)	(0.01)	(0.01)
	21.09		0.13	1.58	-5.25	7.19

7.2 Appendix chapter 2

Table 1. Odds Ratios (Binary Logistic Regression) for Any Psychological Problem (Six-Item Variable) by Family Type in Childhood and Survey Year, Controlled for Other Background Factors. Respondents Aged 19-34. (*** p≤0.001, ** p≤0.01, * p≤0.05, (*) p≤0.10.)

	1968 (Parental Divorce 1934-1965)						2000 (Parental divorce 1966-1997)						*1968 and 2000 (Pooled Data)*	
Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10	Model 11	Model 4	Model 5	Model 6
Divorced Parents	1.94**	1.24	1.67**	1.96 ***	1.95 ***	1.19	1.48**	1.25	1.31*	1.48**	1.48**	1.14	1.90**	1.27
Woman	2.71***	2.72***	2.72***	2.72***	2.74***	2.78***	1.66***	1.65***	1.65***	1.66***	1.75***	1.72***	2.09***	2.15***
Age in Years	1.02	1.02	1.01	1.02	1.02	1.02	1.01	1.01	1.01	1.01	1.03*	1.03(*)	1.01	1.02*
Born Abroad	1.75(*)	1.60	1.45	1.76**	1.74*	1.4	1.52*	1.50*	1.33	1.52**	1.55**	1.36(*)	1.64***	1.41*
Parents' Education (Dominant)														
Vocational school	1.26	1.25	1.28	1.24	1.25	1.22	0.96	0.96	0.96	0.96	0.96	0.96	1.15	1.11
Lower secondary school	1.34	1.31	1.42*	1.27	1.32	1.27	1	1	1.01	1.02	1.02	1.02	1.22	1.17
Upper secondary school or higher	1.96***	1.93***	2.16***	1.80***	1.95***	1.85***	1.09	1.09	1.09	1.1	1.78	1.13	1.38**	1.34*
Family Dissension		2.41***				2.10***		1.72***				1.59**		1.79***
Economic Hardship During Upbringing			2.31***			2.12***			2.17***			1.98***		2.08***
Years of Education				1.02		1.04				0.99		1		1.03(*)
Married/Cohabiting						0.91					0.68**	0.70**		0.78**
Survey Year 2000													1.85***	1.78***
Divorced Parents*Survey Year 2000													0.79	0.88
Constant	0.04***	0.04***	0.04***	0.03***	0.04***	0.02***	0.25***	0.25***	0.24***	0.27***	0.17***	0.18***	0.07***	0.05***
Nagelkerke R²	0.091	0.111	0.113	.09	.09	0.035	0.067	0.047	0.052	0.042	0.044	0.099	0.099	0.132
N	1,633						1,460						3,092	

Table 2. Odds Ratios (Binary Logistic Regression) for different types of psychological problems (six indicators) by Family Type in Childhood and Survey Year, Controlled for Other Background Factors and Interaction Terms between Family Type and Survey Year. Respondents Aged 19-34.

	1968 and 2000 (Pooled Data)											
Variable	General Tiredness		Insomnia		Nervous Trouble		Overexertion		Depression		Mental Illness	
Divorced Parents	1.23	0.89	0.61	0.89	1.84*	0.64	3.30**	2.25**	2.79**	1.36	3.71*	2.1
Woman	2.10***	2.08***	1.69***	2.08***	2.57***	2.74***	1.31***	1.33*	2.41***	2.68***	2.07*	2.19***
Age in Years	1.01	1.02*	1.05	1.02*	0.99	1.02	1.03	1.02	1.03*	1.1	1.07	1.1
Born Abroad	1.43***	1.26	1.32	1.13	2.20***	2.75***	1.45**	1.28	1.58*	1.25	1.05	0.87
Parents' Education (Dominant)												
Vocational school	1.03	0.99	1.21	1.18	0.95	0.95	0.97	0.89	1.09	1.13	0.86	1.21
Lower secondary school	1.33	1.25	0.93	0.91	1.06	1.06	1.19	1.07	1.04	1.19	0.81	1.08
Upper secondary school or higher	1.42**	1.33*	1.25	1.25	0.91	1	1.4	1.24	0.93	1.15	0.61	1.08
Family Dissension		1.61***		2.13***		1.91***		1.71**		2.54***		1.81
Economic Hardship During Upbringing		1.68***		1.91***		1.62***		1.62**		2.37***		1.79
Years of Education		1.03(*)		1.01		0.84		1.05(*)		0.93*		0.86*
Married/Cohabiting		0.98**		0.48***		0.56***		0.73*		0.52***		0.51(*)
Survey Year 2000	1.98***	1.78***	2.85***	1.78***	0.82	0.85	3.07***	2.75**	2.56***	2.70***	1.31	1.81
Divorced Parents*Survey Year 2000	0.99	0.88	1.31	0.88	1.07	1.16	0.49(*)	0.53	0.6	0.96	0.36	0.42
Constant	0.04***	0.05***	0.05***	0.07***	0.04***	0.03***	0.02***	0.03***	0.04***	0.03***	0.001***	0.01***
Nagelkerke R^2	0.09	0.11	0.08	0.126	0.08	0.11	0.08	0.1	0.08	0.1	0.03	0.07
N	3,092											

*** $p \leq 0.001$, ** $p \leq 0.01$, * $p \leq 0.05$, (*) $p \leq 0.10$.

7.3 Appendix chapter 3

Table 1. Effect s of parent's marital status, country and interactions between countries and marital staturs on parental child-contacts , Relative Risk Ratios from multinomial logistic regressions, 95% c.i., coefficients for controlling variables are omitted. The reference outcome is "1 to 4 a month". Weighted results

	Same HH			daily			Several times a week			Less than once a month			Never		
	RRR	95% c.i		RRR	95% c.i		RRR	95% c.i		RRR	95% c.i.		RRR	95% c.i.	
Sweden	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.
France	1,96	1,46	2,62	0,74	0,60	0,93	0,59	0,49	0,71	2,51	1,68	3,76	1,02	0,55	1,92
Denmark	0,60	0,41	0,86	0,96	0,74	1,25	0,81	0,65	1,01	1,01	0,43	2,35	0,91	0,35	2,31
Belgium	5,80	4,24	7,93	1,27	1,03	1,55	0,78	0,65	0,93	1,43	0,91	2,26	1,93	1,09	3,39
Married	Ref.														
Divorced	0,18	0,10	0,33	0,37	0,25	0,54	0,43	0,32	0,57	1,85	1,02	3,32	1,47	0,46	4,61
Widowed	0,48	0,14	1,60	0,92	0,64	1,32	0,81	0,59	1,11	1,73	0,88	3,41	0,29	0,06	1,43
Sweden * divorced	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.
France * divorced	0,89	0,39	2,05	1,09	0,61	1,94	1,62	1,60	2,45	0,68	0,31	1,48	2,02	0,52	7,81
Denmark* divorced	0,99	0,35	2,77	1,27	0,71	2,29	1,37	0,84	2,23	1,09	0,33	3,58	3,35	0,74	15,20
Belgium* divorced	0,60	0,25	1,46	1,05	0,61	1,79	1,40	0,91	2,16	1,53	0,69	3,37	1,38	0,34	5,57
Sweden *widowed	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.
France *widowed	7,70	2,20	27,00	1,18	0,78	1,80	1,39	0,95	2,03	0,56	0,27	1,17	9,28	1,80	47,80
Denmark *widowed	5,50	1,14	26,45	0,81	0,50	1,34	0,94	0,61	1,44	0,78	0,25	2,45	7,05	1,08	45,90
Belgium *widowed	4,45	1,25	15,82	0,83	0,55	1,24	1,31	0,91	1,88	1,04	0,47	2,30	4,52	0,88	23,19
Pseudo r2	0.19,														
(N)	-21,65														

7.4   Appendix chapter 4

Table 1: Full model of the effects of family structure and children's resources and control variables on arriving late for school (Binary Logistic Regression) .

Country ID		B	E.T.	Sig.	Exp(B)
Australia	Single mother	0.44	0.11	0.000	1,55
	Sex	0.12	0.09	0.189	1,13
	Native Family	Ref	Ref	Ref	Ref
	Immigrant family	0.16	0.11	0.167	1,17
	Missing Immigrant family	0.73	0.28	0.010	2,08
	Mother low educational level	Ref	Ref	Ref	Ref
	Medium educational level	0.06	0.13	0.622	1,07
	high educational level	0.17	0.16	0.296	1,18
	missing education	-0.13	0.22	0.567	0.88
	Father low educational level	Ref	Ref	Ref	Ref
	medium educational level	-0.08	0.12	0.502	0.92
	high educational level	-0.29	0.15	0.052	0.75
	missing education	0.12	0.21	0.543	1,13
	Mother blue collar low skilled	Ref	Ref	Ref	Ref
	blue collar high skilled	0.14	0.26	0.584	1,15
	white collar low skilled	-0.03	0.15	0.867	0.97
	white collar high skilled	-0.12	0.15	0.426	0.88
	missing occupation	0.18	0.18	0.327	1,19
	Mother working full time	Ref	Ref	Ref	Ref
	working part time	-0.12	0.12	0.307	0.88
	looking for a work	-0.01	0.23	0.977	0.99
	doing other than work	0.00	0.13	0.982	1,00
	Missing type of work	-0.27	0.43	0.528	0.76
	Non Attendance Pre-Primary education	Ref	Ref	Ref	Ref
	Attendance	0.25	0.20	0.195	1,29
	Missing Pre-Primary education	0.51	0.38	0.179	1,66
	Home possessions	-0.19	0.07	0.005	0.82
	Cultural resources	0.01	0.01	0.450	1,01
	Constant	-1,92	0.32	0.000	0.15
Austria	Single mother	0.38	0.16	0.016	1,46
	Sex	-0.06	0.12	0.616	0.94
	Native Family	Ref	Ref	Ref	Ref
	Immigrant family	0.56	0.17	0.001	1,75
	Missing Immigrant family	1,58	0.36	0.000	4,85
	Mother low educational level	Ref	Ref	Ref	Ref
	Medium educational level	0.03	0.21	0.890	1,03
	high educational level	0.42	0.29	0.142	1,53

	missing education	0.52	0.38	0.168	1,69
	Father low educational level	Ref	Ref	Ref	Ref
	medium educational level	-0.30	0.21	0.141	0.74
	high educational level	0.32	0.26	0.211	1,38
	missing education	-0.61	0.36	0.088	0.54
	Mother blue collar low skilled	Ref	Ref	Ref	Ref
	blue collar high skilled	0.47	0.27	0.085	1,60
	white collar low skilled	0.35	0.19	0.069	1,42
	white collar high skilled	0.30	0.21	0.149	1,35
	missing occupation	0.93	0.23	0.000	2,52
	Mother working full time	Ref	Ref	Ref	Ref
	working part time	-0.24	0.15	0.110	0.79
	looking for a work	0.66	0.30	0.029	1,93
	doing other than work	-0.29	0.16	0.075	0.75
	Missing type of work	-0.06	0.44	0.899	0.95
	Non Attendance Pre-Primary education	Ref	Ref	Ref	Ref
	Attendance	0.56	0.35	0.114	1,75
	Missing Pre-Primary education	2,83	1,17	0.016	17,01
	Home possessions	0.10	0.11	0.379	1,10
	Cultural resources	0.02	0.02	0.186	1,02
	Constant	-4,01	0.52	0.000	0.02
Belgium	Single mother	0.08	0.15	0.573	1,09
	Sex	-0.25	0.12	0.032	0.78
	Native Family	Ref	Ref	Ref	Ref
	Immigrant family	0.74	0.15	0.000	2,11
	Missing Immigrant family	0.93	0.44	0.034	2,53
	Mother low educational level	Ref	Ref	Ref	Ref
	Medium educational level	-0.08	0.18	0.649	0.92
	high educational level	-0.01	0.24	0.971	0.99
	missing education	0.08	0.23	0.713	1,09
	Father low educational level	Ref	Ref	Ref	Ref
	medium educational level	0.15	0.19	0.410	1,16
	high educational level	0.19	0.22	0.408	1,20
	missing education	0.55	0.22	0.015	1,73
	Mother blue collar low skilled	Ref	Ref	Ref	Ref
	blue collar high skilled	-0.19	0.32	0.550	0.83
	white collar low skilled	-0.05	0.17	0.747	0.95
	white collar high skilled	-0.19	0.18	0.294	0.83
	missing occupation	0.16	0.21	0.440	1,17
	Mother working full time	Ref	Ref	Ref	Ref
	working part time	0.03	0.16	0.836	1,03
	looking for a work	0.41	0.25	0.095	1,51
	doing other than work	0.27	0.15	0.079	1,31
	Missing type of work	0.18	0.46	0.701	1,19
	Non Attendance Pre-Primary education	Ref	Ref	Ref	Ref
	Attendance	0.03	0.33	0.929	1,03

	Missing Pre-Primary education	-0.55	0.67	0.410	0.58
	Home possessions	-0.42	0.08	0.000	0.66
	Cultural resources	0.01	0.02	0.722	1,01
	Constant	-1,57	0.44	0.000	0.21
Canada	Single mother	0.41	0.10	0.000	1,51
	Sex	-0.19	0.08	0.023	0.83
	Native Family	Ref	Ref	Ref	Ref
	Immigrant family	0.15	0.10	0.143	1,16
	Missing Immigrant family	0.35	0.28	0.200	1,42
	Mother low educational level	Ref	Ref	Ref	Ref
	Medium educational level	-0.16	0.16	0.308	0.85
	high educational level	-0.16	0.19	0.406	0.85
	missing education	-0.04	0.31	0.895	0.96
	Father low educational level	Ref	Ref	Ref	Ref
	medium educational level	0.01	0.14	0.934	1,01
	high educational level	0.05	0.16	0.749	1,05
	missing education	0.08	0.23	0.746	1,08
	Mother blue collar low skilled	Ref	Ref	Ref	Ref
	blue collar high skilled	-0.07	0.27	0.783	0.93
	white collar low skilled	0.07	0.14	0.631	1,07
	white collar high skilled	0.05	0.14	0.724	1,05
	missing occupation	0.29	0.19	0.130	1,33
	Mother working full time	Ref	Ref	Ref	Ref
	working part time	-0.02	0.11	0.840	0.98
	looking for a work	0.07	0.18	0.688	1,07
	doing other than work	-0.36	0.13	0.005	0.70
	Missing type of work	0.04	0.30	0.907	1,04
	Non Attendance Pre-Primary education	Ref	Ref	Ref	Ref
	Attendance	0.02	0.15	0.874	1,02
	Missing Pre-Primary education	0.41	0.30	0.167	1,51
	Home possessions	-0.31	0.06	0.000	0.74
	Cultural resources	-0.01	0.01	0.532	0.99
	Constant	-0.63	0.28	0.026	0.54
Denmark	Single mother	0.44	0.10	0.000	1,54
	Sex	-0.20	0.08	0.016	0.82
	Native Family	Ref	Ref	Ref	Ref
	Immigrant family	0.24	0.17	0.153	1,27
	Missing Immigrant family	-0.61	0.54	0.264	0.55
	Mother low educational level	Ref	Ref	Ref	Ref
	Medium educational level	-0.20	0.13	0.132	0.82
	high educational level	0.11	0.17	0.520	1,12
	missing education	0.32	0.20	0.108	1,38
	Father low educational level	Ref	Ref	Ref	Ref
	medium educational level	0.02	0.12	0.894	1,02
	high educational level	0.36	0.16	0.022	1,43
	missing education	-0.27	0.19	0.151	0.77

	Mother blue collar low skilled	Ref	Ref	Ref	Ref
	blue collar high skilled	0.76	0.23	0.001	2,14
	white collar low skilled	0.30	0.14	0.038	1,35
	white collar high skilled	0.38	0.14	0.009	1,46
	missing occupation	0.35	0.24	0.143	1,42
	Mother working full time	Ref	Ref	Ref	Ref
	working part time	0.24	0.12	0.040	1,27
	looking for a work	0.36	0.17	0.034	1,44
	doing other than work	0.11	0.14	0.437	1,11
	Missing type of work	0.39	0.35	0.270	1,47
	Non Attendance Pre-Primary education	Ref	Ref	Ref	Ref
	Attendance	-0.02	0.26	0.934	0.98
	Missing Pre-Primary education	1,02	0.43	0.017	2,77
	Home possessions	-0.07	0.06	0.246	0.93
	Cultural resources	-0.01	0.01	0.685	0.99
	Constant	-1,81	0.33	0.000	0.16
Finland	Single mother	0.25	0.10	0.018	1,28
	Sex	-0.24	0.08	0.005	0.79
	Native Family	Ref	Ref	Ref	Ref
	Immigrant family	-0.19	0.31	0.546	0.83
	Missing Immigrant family	-0.55	0.44	0.214	0.58
	Mother low educational level	Ref	Ref	Ref	Ref
	Medium educational level	0.11	0.13	0.398	1,11
	high educational level	0.25	0.16	0.117	1,28
	missing education	0.25	0.33	0.452	1,29
	Father low educational level	Ref	Ref	Ref	Ref
	medium educational level	-0.39	0.11	0.001	0.68
	high educational level	-0.28	0.14	0.042	0.76
	missing education	0.14	0.20	0.468	1,16
	Mother blue collar low skilled	Ref	Ref	Ref	Ref
	blue collar high skilled	-0.07	0.24	0.765	0.93
	white collar low skilled	0.20	0.15	0.202	1,22
	white collar high skilled	0.33	0.16	0.038	1,39
	missing occupation	0.51	0.26	0.048	1,67
	Mother working full time	Ref	Ref	Ref	Ref
	working part time	0.05	0.14	0.736	1,05
	looking for a work	-0.05	0.19	0.801	0.95
	doing other than work	-0.21	0.15	0.152	0.81
	Missing type of work	-0.75	1,63	0.646	0.47
	Non Attendance Pre-Primary education	Ref	Ref	Ref	Ref
	Attendance	0.22	0.17	0.199	1,25
	Missing Pre-Primary education	0.01	0.69	0.992	1,01
	Home possessions	-0.40	0.06	0.000	0.67
	Cultural resources	0.01	0.01	0.280	1,01
	Constant	-0.92	0.28	0.001	0.40
France	Single mother	0.48	0.13	0.000	1,62

	Sex	-0.37	0.11	0.001	0.69
	Native Family	Ref	Ref	Ref	Ref
	Immigrant family	0.90	0.14	0.000	2,46
	Missing Immigrant family	-19,06	5805,08	0.997	0.00
	Mother low educational level	Ref	Ref	Ref	Ref
	Medium educational level	-0.31	0.15	0.034	0.73
	high educational level	-0.33	0.21	0.121	0.72
	missing education	-0.10	0.19	0.593	0.90
	Father low educational level	Ref	Ref	Ref	Ref
	medium educational level	-0.01	0.14	0.970	0.99
	high educational level	0.24	0.20	0.223	1,28
	missing education	0.13	0.20	0.517	1,13
	Mother blue collar low skilled	Ref	Ref	Ref	Ref
	blue collar high skilled	-0.63	0.35	0.069	0.53
	white collar low skilled	0.08	0.16	0.587	1,09
	white collar high skilled	0.09	0.18	0.622	1,09
	missing occupation	-0.14	0.22	0.509	0.87
	Mother working full time	Ref	Ref	Ref	Ref
	working part time	0.10	0.15	0.502	1,11
	looking for a work	0.00	0.22	0.988	1,00
	doing other than work	-0.20	0.16	0.220	0.82
	Missing type of work	-0.62	0.66	0.343	0.54
	Non Attendance Pre-Primary education	Ref	Ref	Ref	Ref
	Attendance	-0.42	0.33	0.202	0.65
	Missing Pre-Primary education	-1,34	0.97	0.165	0.26
	Home possessions	-0.49	0.09	0.000	0.61
	Cultural resources	-0.02	0.02	0.234	0.98
	Constant	-0.36	0.43	0.408	0.70
Germany	Single mother	0.38	0.17	0.026	1,46
	Sex	-0.18	0.13	0.161	0.83
	Native Family	Ref	Ref	Ref	Ref
	Immigrant family	0.72	0.18	0.000	2,05
	Missing Immigrant family	0.94	0.27	0.001	2,56
	Mother low educational level	Ref	Ref	Ref	Ref
	Medium educational level	0.01	0.21	0.980	1,01
	high educational level	0.57	0.25	0.025	1,77
	missing education	-0.29	0.24	0.220	0.75
	Father low educational level	Ref	Ref	Ref	Ref
	medium educational level	-0.16	0.21	0.446	0.85
	high educational level	0.32	0.25	0.197	1,38
	missing education	0.44	0.23	0.058	1,55
	Mother blue collar low skilled	Ref	Ref	Ref	Ref
	blue collar high skilled	-0.44	0.43	0.311	0.65
	white collar low skilled	0.23	0.20	0.264	1,25
	white collar high skilled	-0.17	0.23	0.453	0.84
	missing occupation	-0.04	0.26	0.866	0.96

	Mother working full time	Ref	Ref	Ref	Ref
	working part time	0.16	0.15	0.292	1,17
	looking for a work	-0.46	0.35	0.193	0.63
	doing other than work	-0.18	0.20	0.381	0.84
	Missing type of work	-0.29	0.50	0.568	0.75
	Non Attendance Pre-Primary education	Ref	Ref	Ref	Ref
	Attendance	-0.60	0.25	0.016	0.55
	Missing Pre-Primary education	-0.27	0.63	0.668	0.76
	Home possessions	-0.34	0.10	0.000	0.71
	Cultural resources	0.01	0.02	0.756	1,01
	Constant	-1,53	0.44	0.001	0.22
Greece	Single mother	0.18	0.09	0.045	1,20
	Sex	-0.43	0.08	0.000	0.65
	Native Family	Ref	Ref	Ref	Ref
	Immigrant family	0.13	0.15	0.370	1,14
	Missing Immigrant family	-0.02	0.40	0.953	0.98
	Mother low educational level	Ref	Ref	Ref	Ref
	Medium educational level	0.09	0.10	0.374	1,09
	high educational level	-0.12	0.15	0.433	0.89
	missing education	-0.05	0.48	0.921	0.95
	Father low educational level	Ref	Ref	Ref	Ref
	medium educational level	0.01	0.10	0.929	1,01
	high educational level	-0.11	0.13	0.395	0.89
	missing education	-19,81	35934,24	1,000	0.00
	Mother blue collar low skilled	Ref	Ref	Ref	Ref
	blue collar high skilled	0.01	0.17	0.938	1,01
	white collar low skilled	-0.05	0.12	0.676	0.95
	white collar high skilled	0.07	0.12	0.573	1,07
	missing occupation	-0.02	0.14	0.909	0.98
	Mother working full time	Ref	Ref	Ref	Ref
	working part time	0.10	0.14	0.491	1,10
	looking for a work	-0.09	0.15	0.552	0.91
	doing other than work	-0.15	0.10	0.118	0.86
	Missing type of work	0.69	0.32	0.031	2,00
	Non Attendance Pre-Primary education	Ref	Ref	Ref	Ref
	Attendance	-0.19	0.17	0.265	0.83
	Missing Pre-Primary education	0.38	0.36	0.292	1,46
	Home possessions	-0.10	0.06	0.089	0.91
	Cultural resources	0.03	0.01	0.038	1,03
	Constant	-1,21	0.23	0.000	0.30
Italy	Single mother	0.19	0.11	0.091	1,21
	Sex	-0.46	0.08	0.000	0.63
	Native Family	Ref	Ref	Ref	Ref
	Immigrant family	0.23	0.28	0.415	1,25
	Missing Immigrant family	0.11	0.25	0.659	1,12
	Mother low educational level	Ref	Ref	Ref	Ref

	Medium educational level	0.09	0.11	0.389	1,10
	high educational level	-0.17	0.17	0.314	0.84
	missing education	-0.59	0.37	0.114	0.55
	Father low educational level	Ref	Ref	Ref	Ref
	medium educational level	-0.02	0.10	0.843	0.98
	high educational level	0.18	0.15	0.233	1,20
	missing education	0.23	0.25	0.367	1,26
	Mother blue collar low skilled	Ref	Ref	Ref	Ref
	blue collar high skilled	-0.09	0.24	0.704	0.91
	white collar low skilled	-0.29	0.13	0.024	0.75
	white collar high skilled	0.09	0.13	0.472	1,10
	missing occupation	0.45	0.20	0.025	1,57
	Mother working full time	Ref	Ref	Ref	Ref
	working part time	0.07	0.11	0.524	1,07
	looking for a work	0.52	0.21	0.012	1,69
	doing other than work	0.00	0.12	0.990	1,00
	Missing type of work	-0.10	0.46	0.836	0.91
	Non Attendance Pre-Primary education	Ref	Ref	Ref	Ref
	Attendance	-0.21	0.18	0.233	0.81
	Missing Pre-Primary education	-0.20	0.82	0.810	0.82
	Home possessions	-0.28	0.06	0.000	0.76
	Cultural resources	0.00	0.01	0.982	1,00
	Constant	-0.60	0.25	0.016	0.55
New Zealand	Single mother	0.31	0.10	0.002	1,36
	Sex	-0.03	0.08	0.707	0.97
	Native Family	Ref	Ref	Ref	Ref
	Immigrant family	-0.11	0.10	0.277	0.90
	Missing Immigrant family	-0.01	0.35	0.977	0.99
	Mother low educational level	Ref	Ref	Ref	Ref
	Medium educational level	0.12	0.14	0.404	1,13
	high educational level	0.06	0.19	0.756	1,06
	missing education	0.26	0.17	0.119	1,30
	Father low educational level	Ref	Ref	Ref	Ref
	medium educational level	-0.19	0.12	0.107	0.83
	high educational level	-0.06	0.16	0.721	0.95
	missing education	-0.07	0.14	0.642	0.94
	Mother blue collar low skilled	Ref	Ref	Ref	Ref
	blue collar high skilled	-0.07	0.21	0.738	0.93
	white collar low skilled	0.01	0.15	0.927	1,01
	white collar high skilled	0.00	0.14	0.978	1,00
	missing occupation	0.15	0.16	0.324	1,17
	Mother working full time	Ref	Ref	Ref	Ref
	working part time	-0.23	0.10	0.019	0.79
	looking for a work	-0.13	0.19	0.500	0.88
	doing other than work	-0.18	0.11	0.107	0.84
	Missing type of work	-0.25	0.36	0.492	0.78

	Non Attendance Pre-Primary education	Ref	Ref	Ref	Ref
	Attendance	-0.25	0.14	0.064	0.78
	Missing Pre-Primary education	-0.24	0.41	0.546	0.78
	Home possessions	-0.40	0.05	0.000	0.67
	Cultural resources	0.00	0.01	0.742	1,00
	Constant	-0.08	0.26	0.772	0.93
Norway	Single mother	0.46	0.10	0.000	1,58
	Sex	-0.07	0.10	0.455	0.93
	Native Family	Ref	Ref	Ref	Ref
	Immigrant family	0.29	0.19	0.135	1,33
	Missing Immigrant family	-0.69	0.92	0.454	0.50
	Mother low educational level	Ref	Ref	Ref	Ref
	Medium educational level	-0.19	0.20	0.335	0.83
	high educational level	-0.09	0.25	0.723	0.92
	missing education	-0.27	0.30	0.367	0.76
	Father low educational level	Ref	Ref	Ref	Ref
	medium educational level	0.18	0.19	0.353	1,19
	high educational level	0.54	0.22	0.012	1,71
	missing education	0.56	0.25	0.026	1,74
	Mother blue collar low skilled	Ref	Ref	Ref	Ref
	blue collar high skilled	0.24	0.30	0.424	1,27
	white collar low skilled	-0.13	0.19	0.495	0.88
	white collar high skilled	0.00	0.18	0.987	1,00
	missing occupation	0.21	0.25	0.397	1,23
	Mother working full time	Ref	Ref	Ref	Ref
	working part time	0.01	0.12	0.926	1,01
	looking for a work	0.23	0.25	0.368	1,26
	doing other than work	0.01	0.15	0.947	1,01
	Missing type of work	0.80	0.45	0.074	2,22
	Non Attendance Pre-Primary education	Ref	Ref	Ref	Ref
	Attendance	-0.11	0.18	0.536	0.90
	Missing Pre-Primary education	-0.07	0.38	0.845	0.93
	Home possessions	-0.48	0.08	0.000	0.62
	Cultural resources	0.00	0.01	0.703	1,00
	Constant	-0.61	0.37	0.096	0.54
Portugal	Single mother	-0.14	0.12	0.246	0.87
	Sex	-0.24	0.08	0.004	0.79
	Native Family	Ref	Ref	Ref	Ref
	Immigrant family	0.54	0.17	0.002	1,71
	Missing Immigrant family	-0.91	0.89	0.302	0.40
	Mother low educational level	Ref	Ref	Ref	Ref
	Medium educational level	-0.18	0.13	0.153	0.83
	high educational level	0.00	0.17	0.994	1,00
	missing education	-0.19	0.12	0.103	0.82
	Father low educational level	Ref	Ref	Ref	Ref
	medium educational level	0.42	0.12	0.000	1,53

	high educational level	0.56	0.16	0.000	1,76
	missing education	0.52	0.20	0.009	1,67
	Mother blue collar low skilled	Ref	Ref	Ref	Ref
	blue collar high skilled	-0.16	0.15	0.291	0.85
	white collar low skilled	0.30	0.12	0.010	1,35
	white collar high skilled	0.24	0.15	0.106	1,27
	missing occupation	0.06	0.22	0.801	1,06
	Mother working full time	Ref	Ref	Ref	Ref
	working part time	0.11	0.14	0.439	1,11
	looking for a work	-0.01	0.21	0.971	0.99
	doing other than work	-0.10	0.12	0.421	0.91
	Missing type of work	0.21	0.60	0.723	1,24
	Non Attendance Pre-Primary education	Ref	Ref	Ref	Ref
	Attendance	-0.10	0.10	0.300	0.90
	Missing Pre-Primary education	0.33	0.46	0.469	1,39
	Home possessions	-0.13	0.06	0.044	0.88
	Cultural resources	-0.01	0.01	0.362	0.99
	Constant	-1,37	0.22	0.000	0.25
Spain	Single mother	0.21	0.12	0.080	1,23
	Sex	-0.21	0.08	0.009	0.81
	Native Family	Ref	Ref	Ref	Ref
	Immigrant family	0.00	0.22	0.988	1,00
	Missing Immigrant family	-0.15	0.43	0.721	0.86
	Mother low educational level	Ref	Ref	Ref	Ref
	Medium educational level	-0.11	0.11	0.320	0.90
	high educational level	-0.06	0.16	0.702	0.94
	missing education	0.24	0.15	0.113	1,27
	Father low educational level	Ref	Ref	Ref	Ref
	medium educational level	-0.05	0.11	0.639	0.95
	high educational level	0.00	0.14	0.978	1,00
	missing education	-0.26	0.18	0.149	0.77
	Mother blue collar low skilled	Ref	Ref	Ref	Ref
	blue collar high skilled	-0.27	0.18	0.130	0.76
	white collar low skilled	-0.06	0.11	0.585	0.94
	white collar high skilled	0.03	0.14	0.831	1,03
	missing occupation	0.32	0.20	0.112	1,38
	Mother working full time	Ref	Ref	Ref	Ref
	working part time	-0.01	0.11	0.896	0.99
	looking for a work	-0.25	0.22	0.263	0.78
	doing other than work	-0.30	0.11	0.005	0.74
	Missing type of work	-0.50	0.59	0.394	0.61
	Non Attendance Pre-Primary education	Ref	Ref	Ref	Ref
	Attendance	-0.38	0.16	0.020	0.68
	Missing Pre-Primary education	-0.21	0.42	0.620	0.81
	Home possessions	-0.19	0.06	0.003	0.83
	Cultural resources	0.01	0.01	0.653	1,01

	Constant	-0.63	0.25	0.012	0.53
Sweden	Single mother	0.48	0.09	0.000	1,62
	Sex	-0.13	0.07	0.087	0.88
	Native Family	Ref	Ref	Ref	Ref
	Immigrant family	0.44	0.11	0.000	1,56
	Missing Immigrant family	0.58	0.30	0.052	1,79
	Mother low educational level	Ref	Ref	Ref	Ref
	Medium educational level	-0.20	0.12	0.103	0.82
	high educational level	0.04	0.14	0.754	1,04
	missing education	-0.13	0.18	0.468	0.88
	Father low educational level	Ref	Ref	Ref	Ref
	medium educational level	-0.03	0.10	0.742	0.97
	high educational level	0.22	0.12	0.060	1,25
	missing education	0.03	0.16	0.831	1,04
	Mother blue collar low skilled	Ref	Ref	Ref	Ref
	blue collar high skilled	-0.02	0.32	0.948	0.98
	white collar low skilled	0.11	0.14	0.425	1,12
	white collar high skilled	0.20	0.14	0.164	1,22
	missing occupation	0.20	0.20	0.326	1,22
	Mother working full time	Ref	Ref	Ref	Ref
	working part time	-0.05	0.09	0.573	0.95
	looking for a work	0.04	0.17	0.836	1,04
	doing other than work	0.06	0.13	0.662	1,06
	Missing type of work	0.14	0.36	0.701	1,15
	Non Attendance Pre-Primary education	Ref	Ref	Ref	Ref
	Attendance	-0.12	0.11	0.275	0.89
	Missing Pre-Primary education	0.21	0.28	0.455	1,24
	Home possessions	-0.27	0.05	0.000	0.76
	Cultural resources	0.02	0.01	0.138	1,02
	Constant	-0.75	0.24	0.002	0.47
United Kingdom	Single mother	0.30	0.10	0.003	1,35
	Sex	-0.11	0.09	0.198	0.90
	Native Family	Ref	Ref	Ref	Ref
	Immigrant family	-0.28	0.16	0.084	0.76
	Missing Immigrant family	0.28	0.33	0.402	1,32
	Mother low educational level	Ref	Ref	Ref	Ref
	Medium educational level	-0.02	0.14	0.914	0.99
	high educational level	-0.09	0.19	0.639	0.91
	missing education	0.06	0.19	0.762	1,06
	Father low educational level	Ref	Ref	Ref	Ref
	medium educational level	-0.15	0.12	0.224	0.86
	high educational level	0.21	0.16	0.197	1,23
	missing education	0.12	0.16	0.430	1,13
	Mother blue collar low skilled	Ref	Ref	Ref	Ref
	blue collar high skilled	0.39	0.33	0.246	1,47

	white collar low skilled	0.05	0.13	0.697	1,05
	white collar high skilled	0.21	0.14	0.136	1,24
	missing occupation	0.36	0.19	0.060	1,43
	Mother working full time	Ref	Ref	Ref	Ref
	working part time	-0.02	0.10	0.865	0.98
	looking for a work	0.02	0.21	0.938	1,02
	doing other than work	0.07	0.12	0.557	1,07
	Missing type of work	0.64	0.33	0.050	1,90
	Non Attendance Pre-Primary education	Ref	Ref	Ref	Ref
	Attendance	-0.60	0.16	0.000	0.55
	Missing Pre-Primary education	-0.22	0.42	0.605	0.81
	Home possessions	-0.41	0.06	0.000	0.67
	Cultural resources	-0.01	0.01	0.589	0.99
	Constant	0.01	0.27	0.965	1,01
United States	Single mother	0.52	0.10	0.000	1,68
	Sex	0.03	0.09	0.758	1,03
	Native Family	Ref	Ref	Ref	Ref
	Immigrant family	0.64	0.12	0.000	1,90
	Missing Immigrant family	0.56	0.26	0.030	1,76
	Mother low educational level	Ref	Ref	Ref	Ref
	Medium educational level	0.05	0.18	0.802	1,05
	high educational level	-0.10	0.22	0.636	0.90
	missing education	-0.24	0.28	0.391	0.79
	Father low educational level	Ref	Ref	Ref	Ref
	medium educational level	-0.56	0.15	0.000	0.57
	high educational level	-0.40	0.19	0.029	0.67
	missing education	-0.17	0.21	0.404	0.84
	Mother blue collar low skilled	Ref	Ref	Ref	Ref
	blue collar high skilled	-0.50	0.36	0.160	0.60
	white collar low skilled	0.02	0.20	0.939	1,02
	white collar high skilled	-0.02	0.20	0.927	0.98
	missing occupation	0.19	0.23	0.419	1,20
	Mother working full time	Ref	Ref	Ref	Ref
	working part time	-0.03	0.14	0.840	0.97
	looking for a work	0.47	0.18	0.007	1,60
	doing other than work	-0.04	0.14	0.777	0.96
	Missing type of work	-0.91	0.50	0.071	0.40
	Non Attendance Pre-Primary education	Ref	Ref	Ref	Ref
	Attendance	0.00	0.28	1.000	1,00
	Missing Pre-Primary education	0.31	0.50	0.530	1,37
	Home possessions	-0.14	0.06	0.017	0.87
	Cultural resources	-0.01	0.01	0.563	0.99
	Constant	-1,53	0.40	0.000	0.22

7.5 Appendix chapter 5

		Gap in mother's education
Gap in mother's education	Pearson Correlation	1
	Sig. (2-tailed)	
Gap in home possessions	Pearson Correlation	.675[**]
	Sig. (2-tailed)	0.003
Transition from paid-worker to care-giver	*Pearson Correlation*	-.484[*]
	Sig. (2-tailed)	0.049
Paid-work	Pearson Correlation	-0.131
	Sig. (2-tailed)	0.621
Care-giving	Pearson Correlation	-0.415
	Sig. (2-tailed)	0.098
Economic Policies favoring average-income single-parent families	Pearson Correlation	-0.192
	Sig. (2-tailed)	0.46
Economic Policies favoring low-income single-parent families	Pearson Correlation	0.072
	Sig. (2-tailed)	0.783
Percentage mother's disrupted families with part time job	Pearson Correlation	0.326
	Sig. (2-tailed)	0.202
Public Spending on Child Care % GDP	Pearson Correlation	-0.237
	Sig. (2-tailed)	0.359
Benefits parental leave	Pearson Correlation	.618[**]
	Sig. (2-tailed)	0.008
Public spending on family benefits % GDP	Pearson Correlation	-0.361
	Sig. (2-tailed)	0.154
Duration Parental leave (weeks)	Pearson Correlation	0.038
	Sig. (2-tailed)	0.886
Percentage that do not agree that: child need father and mother	Pearson Correlation	-.551[*]
	Sig. (2-tailed)	0.022
Percentage Disrupted families	Pearson Correlation	-.670[**]
	Sig. (2-tailed)	0.003