

# Socio-economic resources, relationship processes, and separation

Diederik Boertien

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DIRECTOR DE LA TESI :

Prof. Dr. Gøsta Esping-Andersen

DEPARTAMENT OF POLITICAL AND SOCIAL SCIENCES



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## Abstract

This thesis consists of three empirical papers that all study relationship processes and their effects on divorce. Of particular interest is the role that socio-economic resources play in this story. In the first empirical paper of this thesis I investigate why there exists a negative correlation between women's education and the risk of divorce. The second paper addresses whether the correlation between income and separation is causal by looking at the effects of lottery wins. The last empirical chapter aims to explain a common but relatively illogical course of events, namely, the dissolution of relatively satisfying relationships. Overall the results of this thesis show that resources play an important role in relationship dynamics, but they primarily affect the barriers to leave each other, instead of improving the marital lives of couples directly.





## Preface

This thesis is a collection of three papers that have as their common theme that they investigate dynamics within relationships and how these dynamics affect the risk of divorce. Of main interest are the effects socio-economic resources have on these dynamics. Recently, many scholars working on social demographic topics have moved their attention to the increased levels of family polarization that have emerged in many societies today (Blossfeld & Timm, 2003; Ellwood & Jencks, 2004; Esping-Andersen, 2005; 2007; 2009; McLanahan, 2004; Schwartz & Mare, 2005; de Graaf & Kalmijn, 2006; Martin, 2006; Härkönen & Dronkers, 2007; McLanahan & Perchenski, 2008).

Social change over the last decades has included increased female labor force participation, lower levels of fertility, later ages at marriage, higher divorce risks, a greater prevalence of single parenthood, and an increase in assortative mating (Lesthaege, 1995; Van de Kaa, 2001; Blossfeld & Timm, 2003; Billari & Kohler, 2004). These developments have had a considerable impact on inequalities between families (McLanahan, 2004; Esping-Andersen, 2005; 2007; 2009; Blossfeld, 2009). Especially the increasing prevalence of divorce and single parenthood has disproportionately affected the lower strata of society in recent years. Both divorce and single parenthood have been shown to affect the socio-economic position and well-being of both adults and their children (Amato, 1996; 2000; Dronkers, 1999; Booth & Amato, 2001; Strohschein, 2005; Kalmijn & Monden, 2006; Amato & Hohmann-Marriott,

2007; Kalmijn et al., 2007). While plenty of research has pointed at increased family polarization and the underlying demographic patterns, little research has addressed the question why these socioeconomic disparities in demographic behavior exist. The papers of this thesis contribute to that understanding. All three focus on divorce; other parts of demographic behavior are therefore not considered here. The first two papers directly address the relationship between resources and divorce; the first focuses on education and the second one on income. The last empirical paper of the thesis looks at a type of divorce that seems to be of essential interest to understand educational differences in divorce risk: the dissolution of relatively satisfied relationships. In the remainder of this introduction I will outline the gaps in current research on inequality and divorce, and how the different papers of the thesis contribute to filling these gaps.

## Resources and Divorce

The concern regarding rising family polarization emerged first in the U.S. primarily based on the observation that the increase in single parenthood was disproportionately concentrated among the lower educated and ethnic minorities (Ellwood & Jencks, 2004; McLanahan, 2004; McLanahan & Perchenski, 2008). More generally, scholars have noticed that the rise in income inequality over the last decades is also reflected in income inequality among families with children (Western et al., 2008). Recently, also European scholars have showed that increased family polarization

takes place (Esping-Andersen, 2009; Härkönen & Dronkers, 2007; Blossfeld, 2009). Income inequality between families is likely to be reflected in less equality of opportunities for children (Esping-Andersen, 2009). In addition, a large body of research has shown the obstacles growing up in a single-parent family poses for future attainment of children. Parental divorce or growing up with one parent in general has shown to affect a wide variety of outcomes including educational attainment, labor market outcomes, and various demographic behaviors such as age at marriage, pre-marital cohabitation and children's own future family stability (McLanahan & Sandefur, 1994; Gregg et al., 1999; Amato, 2000; McLanahan, 2004; Dronkers & Härkönen, 2008). Given that all these outcomes are related to socio-economic well-being, changes in family structure have greatly affected inequalities between families and children in many dimensions of life.

This body of literature distinguishes itself from more general research on inequality by pointing at changing family structures as a generator of larger disparities in well-being within society. Several studies therefore have started to look at how family structure changes have contributed to the increased income inequality that took place over the last decades (Hyslop, 2001; McLanahan & Percheski, 2008; Esping-Andersen, 2007). These studies show that while family structure changes are not the most important contributor, its effects are still likely to be considerable. A second branch of studies has examined why family structure has disproportionately affected the lower regions of the income distribution. The focus on the increase in single parenthood as a key

contributor to inequality has led scholars in primarily the U.S. to look at why lower educated women shun marriage but still have children (Wilson, 1987; Edin & Kafalas, 2005; Ellwood & Jencks, 2004; McLanahan & Percheski, 2008). These studies point at the increased economic insecurity among the lower educated. Stable employment and income levels not too far below median income seem to be pre-requisites for marriage, which are increasingly not met by individuals at the bottom of the income distribution (Watson & McLanahan, 2004; Edin & Kefalas, 2005; Smock et al., 2005). While this route of entrance into single parenthood is more common in the U.S., the main route in Europe is through divorce. Very little is known about why, today, the lower educated divorce more than the higher educated, both in the U.S. and in Europe (Amato, 2010). It is this gap in research on family polarization to which this thesis contributes. The three chapters of this thesis all aim to contribute to a greater understanding of inequalities in divorce risk, which would be essential for the understanding of why family polarization has increased, especially within the European context.

Where studies on single parenthood have been based on how the increase has disproportionately affected the lower educated, studies on divorce have noticed an additional trend. Levels of divorce increased, making family structure a more important variable in social stratification processes. But, in addition, divorce used to be more common among the higher educated than among the lower educated, while today this is the other way around in the U.S. and several European countries (Hoem, 1997; Berrington & Diamond, 1999; Jalovaara, 2001; 2003; Teachman, 2002; Raymo et al., 2004;

Chan & Halpin, 2005; Härkönen & Dronkers, 2006; de Graaf & Kalmijn, 2006; Park et al., 2009; Cooke & Gash, 2010; Lyngstad & Jalovaara, 2010; Bernardi & Martinez-Pastor, 2011a; 2011b; Salvini & Vignoli, 2011; Chen, 2012). While male education has been related to lower divorce risk for long, the negative correlation between female education and union dissolution has been more recent in most countries. This reversal in the gradient of divorce was predicted already as early as the 1960s by the sociologist Goode (1962; 1963). He argued that initially, when levels of divorce are low, it are the higher educated who divorce more due to the resources needed to overcome social, economic, and legal barriers to divorce. Once divorce becomes more wide-spread these barriers are likely to erode. Ultimately, the lower educated will therefore divorce more because they experience more financial strain and might have worse skills to manage relationships. Some studies have provided support for this theory at the macro-level. A reversal in the gradient of divorce has been observed for female education in several countries (Hoem, 1997; Chan & Halpin, 2005; Härkönen & Dronkers, 2006; de Graaf & Kalmijn, 2006; Lyngstad & Jalovaara, 2010), at the same time cross-national variation in these trends exist. A study of 17 countries has shown how the expansion of divorce and other unconventional demographic behaviors is indeed related to a more negative educational gradient in divorce. Welfare state expenditure was related to a more positive educational gradient in divorce (Härkönen & Dronkers, 2006).

It is, however, at the micro-level that research on the topic gets scarcer. Which variables can explain the correlation between

education and divorce at the micro-level? There exists a large body of literature that has related socio-economic disadvantage to higher divorce risks (see for more detailed reviews of the literature the different chapters). Notable are the studies of Conger et al. (1990; 1994; 1999; 2010) that have shown how unemployment and financial hardship affect marital interaction and satisfaction. Many other studies have related income and unemployment to divorce risk (Becker, 1981; Oppenheimer, 1997; Ono, 1998; Jalovaara, 2001; Kraft, 2001; Hansen, 2005; Lewin, 2005; Poortman, 2005; Amato et al., 2007; Teachman, 2010).

But, these studies have not managed to make any causal claims (McLanahan & Percheski, 2008) due to the correlation of income and unemployment with other personal characteristics and events occurring at the same time. Just as education is also a proxy for many facets of socio-economic disadvantage, any correlation of income and unemployment with outcome variables are likely to reflect effects of socio-economic disadvantage in general too. Investigating a correlation between income, unemployment and divorce risk will therefore only give insight into how socio-economic disadvantage is related to union dissolution if it shows *how* income and employment reduce divorce risk.

Income can alleviate financial strain and improve marital interaction (Conger et al, 1990; 1994; 1999; 2010; Poortman, 2005; Amato et al., 2007; Teachman, 2010), but does this explain the correlation between income and divorce risk? What is the role of barriers? Income can also raise the barriers to divorce because larger

investments in the couple can be undertaken, and partners have more to lose when they divorce each other which would mean lost access to their shared resources. A correlation of income with divorce could therefore both reflect a reduction in financial strain, or an increase in barriers to divorce. It is the inability of this literature to make any causal statements about the effects of resources on divorce and the underlying mechanisms that provoked the first paper of my thesis.

Chapter 2 of the thesis (“Jackpot? Gender Differences in the Effects of Lottery Wins on Separation, published in the *Journal of Marriage and Family*), uses information on small to medium-sized lottery wins to uncover the causal effect of exogenous temporary income on divorce risk. Small winners are compared to bigger winners to estimate the effect of temporary income for a sample of lottery winners. Not only does this approach allow the separation of the effects of income from other socio-economic disadvantages, the data also allowed me to show how income relates to divorce risk by using information on consumption and satisfaction with various domains of life, including marital satisfaction. If income affects the quality of the relationship significantly, this should be reflected in consumption changes and increases in satisfaction with the domains of life where these expenditures take place (e.g. social life, leisure time). If income affects marital satisfaction through these channels support is found for the role of financial stress in this story. Chapter 2 therewith does not only allow investigating whether a causal effect exists of income on separation risk, it also enables shedding light on the causal chain that connects income to separation risk.

The separation of results by gender will also allow showing gender differences in the effects of income on consumption, satisfaction and separation.

Another gap in the literature is that it remains unclear how important different determinants of divorce are for explaining the correlation between socio-economic disadvantage and union dissolution. How important are the mechanisms suggested to be at play in earlier research when explaining socio-economic disadvantage in marital stability? Is there need for additional explanations? Chapters 1 and 2 will both give important indications about the relative importance of financial strain for marital satisfaction and divorce risk, as well as the role of barriers and other possible explanations derived from the literature.

Chapter 1 will bring a holistic perspective on the issue and focus on how the negative correlation between female education and divorce can be explained and how important different explanations are in this process (“The negative female educational gradient of divorce: marital satisfaction, barriers to divorce, and the life course”, co-authored with Juho Härkönen). The analysis of Chapter 1 gives an indication of how important different micro-processes are and disentangles effects that go through marital satisfaction from effects that affect the barriers to divorce. By measuring marital satisfaction and barriers to divorce directly, the validity and importance of different processes at play is empirically determined. The chapter starts out by examining marital satisfaction trajectories by female education. Subsequently, discrete-time event history models



explaining divorce are estimated to look at the role of marital satisfaction and other explanations when explaining divorce risk differentials by education.

I have chosen to focus only on female education in Chapter 1. More generally, analyses will be separated by gender in all chapters, because pooling the cases and controlling for gender might mask how variables function differently depending on the gender of the person. The effects of socio-economic variables have repeatedly been found to affect divorce risk in different ways for men and women (Kalmijn & Poortman, 2006; Lundberg, 2010; Sayer et al., 2011). Specifically for Chapter 1 of this thesis, I have chosen to focus on female education for theoretical reasons. Two dominant perspectives in the divorce literature would predict female resources to increase divorce risk. On one hand, Becker (1981) posited that the existence of gains from specialization makes income differences within a couple increase dependency and thereby reduce divorce risk. On the other hand, the so-called ‘doing gender’ explanations argued that when women bring in resources this contradicts socially established expectations about what is ‘male’ and ‘female’ behavior. ‘Doing gender’ could bring pressures to couple life (Brines, 1994; Bittman et al., 2003). Because nowadays in many societies resources brought in by women stabilize unions, the relevance of these theoretical arguments is weaker (Chen, 2012; Chan and Halpin, 2005; Hoem, 1997; Park, Raymo and Creighton, 2009; Raymo, Iwasawa and Bumpass, 2004; Salvini and Vignoli 2011). Oppenheimer (1997) suggested that two sources of income are increasingly the norm for families and form a safety net for the

increasingly unstable employment trajectories of breadwinners. Female income can thereby alleviate financial pressures and might provide more stability within couples. The question therefore arises, do female resources really stabilize relationships? Many studies have examined this (Özcan & Breen, 2012) but have suffered from the mentioned inability to separate the effects of income from others. Chapter 2 on the effects of lottery wins therewith also provides insights into this issue. By reporting results separately for men and women who won money in the lottery, the results of the chapter allow to estimate the effects of income brought in by women in particular.

According to Goode's (1962; 1963) prediction it are the micro-processes that go through marital satisfaction that matter today. Because socio-economic advantage is expected to directly affect marital interaction (Conger et al., 1990; 1994; 1999; 2010), and the lower educated might have worse relationship skills (Amato, 1996; Hoem, 1997; Dronkers, 2002), effects of disadvantage are expected to go through marital satisfaction once barriers to divorce erode. Surprisingly, the results of Chapters 1 and 2 of this thesis will show the insignificance of marital satisfaction when explaining the effects of resources on divorce risk. If one departs from social exchange theory (Levinger, 1965; 1976), which posits that divorce decisions are based on the costs and benefits from the relationship, barriers to divorce and on alternatives to the relationship, one would thus expect the effect of resources to go through barriers and alternatives instead.

This observation fits with studies from the literature on relationship processes. A recent study has shown how variation exists in the levels of marital satisfaction at which couples divorce (Amato & Hohmann-Marriott, 2007); also many couples whose relationships were relatively untroubled do break-up. Given the importance of variation in barriers and alternatives to relationships, it appears to be essential to understand why people vary in the level of marital satisfaction at which they divorce. It is this question that is the theme of Chapter 3 of this thesis (“Was it a Mistake? The Triggers Behind the Dissolution of Satisfied Relationships”).

In Chapter 3 I concentrate on an apparently illogical relationship dynamic: couples that report to be entirely satisfied with their relationship but who still separate. A considerable share of ruptures follows this pattern. From the perspective of social exchange theory one would expect that if benefits from the relationships are high, but a break up still occurs, barriers to divorce are likely to have been low and the alternatives to the relationship good. The paper tests these propositions and attempts to uncover the relationship dynamics that precede this kind of break-up. Competing risk event history models are estimated comparing the risk of leaving a satisfying relationship with the risk of staying in the relationship or leaving an unsatisfying relationship. Various possible explanations for this kind of union dissolution are empirically verified.

Overall, the different chapters of this thesis fill gaps in the debate on family polarization and suggest avenues for future research that will be discussed in the conclusion of this thesis. The main

contribution of the thesis overall is to an understanding of whether several dominant perspectives in the field are valid and can help explain the relationship between resources and union stability. Is Goode's proposition correct that, today, variation in marital satisfaction determines inequalities in divorce risk? What is the importance of approaches focusing on financial stress and its impacts on marital satisfaction when explaining the relationship between resources and union stability? How can the relationship between resources and divorce risk in general be explained? At the same time, the thesis also makes contributions beyond the family polarization literature. Each of the chapters provides insights into processes that explain divorce in general. The separate analyses done by gender give new insights on how relationship processes are related to gender inequality. And, the inclusion of consumption and satisfaction variables gives insight into the importance of resources for happiness in general. In the next sections the theoretical framework that has been central to this thesis will be described, and it will be explained which data have been used as well as the general methodological choices made that are common to all parts of the thesis.

### *Theoretical Considerations*

The main theoretical challenge is to explain the positive correlation between female resources and relationship stability. It has been argued that main theories of family dynamics are not able to explain the current negative educational gradient of divorce for women

(Oppenheimer, 1997). What would these theoretical predictions predict, and what alternatives are available?

Becker et al. (1977) divided explanations of divorce risk into those that affect the gains from specialization, which primarily increase dependency within the couple, and those of non-economic factors, which increase the gains from marriage in general. They argued that the factors that are substitutes for commodity income should be inversely related between spouses in order to maximize the benefit from specialization within the family. Specialization allows both members of the couple to increase their productivity in their area of dedication. Such a benefit becomes smaller when both partners start being active in the labor market. Female resources have from this perspective a destabilizing effect on relationships because the total gains from marriage become lower. In addition, specialization in market and non-market skills form marriage-specific capital, which is to say, investments that are lost when leaving the relationship. Marriage-specific capital thereby constitutes barriers for the couple to leave each other. However, as Becker and associates also acknowledge some resources, such as education, have positive effects on the gains from marriage too, because they are valued characteristics that can increase the non-economic benefits from relationships. Depending on the resource one looks at, the correlation with divorce might therefore differ.

It is this effect of female resources that Oppenheimer emphasized in her treatment. Women's resources are today increasingly needed for a family to reach satisfactory levels of well-being, and are therefore

valued assets that stabilize relationships (Oppenheimer, 1997). Besides placing more emphasis on the direct effects of income on the gains from marriage, she also criticized the notion that specialization per se has a stabilizing effect on relationships. Similarity in market productivity can also have positive effects on the gain from marriage. Shared economic roles can increase mutual understanding and support, and certain scale advantages can also be achieved when both partners within the couple have similar labor market participation. The relation between earnings inequality within the couple and the gains from marriage does therefore not have to be positive. In addition, she argued that the absolute level of income also matters for dependency within relationships, rather than just the share of income brought in by each of the partners. The more income both partners have, the more they will lose when they divorce each other.

The benefits from role similarity are not expected from the perspective in which behavior of the couple is determined by what is prescribed by societal norms about gender roles, also referred to as 'doing gender' (Brines, 1994; Bittman et al., 2003). From this perspective any situation that would contradict expected gender roles can provoke an adjustment in behavior that would restore the gender identities within the couple. For instance, it has been argued that when women earn more than their husbands, husbands reduce their domestic work input to restore their 'male' identities (Brines, 1994). From this perspective, female resources are likely to reduce marital satisfaction within the couple, either for men who feel

threatened in their gender identities, or for women who have to deal with the compensating behavior of their husbands.

Overall, these main theories posit different mechanisms through which female resources can affect divorce risk. In theory, all these different mechanisms could be at play at the same time, and some theoretical perspectives would predict the same kind of relationship between female resources and divorce. Empirical identification of these different mechanisms is therefore a challenge, even more so determining their relative importance for the relationship between female resources and divorce. In this thesis I aim to overcome these challenges by looking at these theories from a social exchange theoretical perspective.

Social exchange theory has been applied to family life by Levinger (1965; 1976). Levinger considered a relationship between two persons to be a particular case of group membership. Therefore, the same considerations that explain leaving or entering a group can be applied to relationships too. Theories of group cohesion posit that the decision to leave a group is based on the direct benefits and costs related to being a member, the barriers to leave the group, and the attractiveness of other groups or not being in a group (Festinger et al., 1950). This division of the facets that determine the decision to divorce fits well with Goode's predictions about the reversal of the social correlates of divorce. Goode (1962; 1963) specifically posits how social change can affect the relative importance of barriers and that this determines how socio-economic disadvantage is related to divorce risk. It is the decrease in the importance of

barriers and the increase in the importance of direct benefits from the relationship that will eventually make the lower strata divorce more.

Dividing the determinants of relationship stability into these three elements and applying it to the theoretical perspectives above, allows for more refined predictions that can be empirically verified.

1) Becker's thesis about marriage-specific capital that is created by specialization is an argument about increased barriers to divorce. Here, one would expect a positive effect of female resources on divorce risk which is mediated by barriers. 2) Predictions about 'doing gender' would see women's income and education to positively affect divorce risk through reduced marital satisfaction. 3) Oppenheimer's argument about the scale advantages of economic role sharing and the effects of absolute income emphasizes the increasing barriers to divorce when female resources go up. In this case we would observe negative effects of female resources on divorce risk, which are mediated by barriers. 4) Oppenheimer's argument about the increased well-being of couples that comes about when women start bringing in more money, as well as Becker's argument about the positive effects of non-economic factors on the gains from marriage, such as women's education, are arguments about stabilizing effects of resources which are mediated through marital satisfaction.

Adding the main element through which different mechanisms affect divorce risk thereby allows distinguishing these four pathways that each fit with different mechanisms that are central to



theoretical perspectives on family behavior. I aim to empirically measure both the effects of resources that are mediated by marital satisfaction as well as those that are mediated by barriers to divorce. This enables me to identify the relative importance of the different theoretical perspectives when explaining the correlation between resources and divorce.

One note has to be made regarding this application of social exchange theory. Social exchange theory also stresses the role of alternatives to the current relationship. It is, however, not clear whether the addition of alternatives is important in this thesis. Good alternatives are likely to manifest themselves in lower barriers to divorce and/or lower satisfaction with the current relationship. For the purposes of this thesis, alternatives are therefore seen as a mechanism through which marital satisfaction and barriers can be altered, rather than that they form an extra dimension on the same level of abstraction that has to be considered separately.

## Data and Methodological Choices

I use data from the British Household Panel Survey (BHPS) for all three empirical chapters of this thesis. The BHPS is a representative longitudinal household survey of the British population, which annually interviews all individual members of a sample of British households. The first wave dates from 1991 and the last wave is from 2009. A major advantage of these data is their wide coverage of questions, ranging from socioeconomic factors, including lottery

wins, to marital satisfaction and indicators of personal and social stressors. One of the central variables of this study, marital satisfaction, has only been measured since 1996. The observation window of these chapters therefore starts in 1996.

The thesis has therefore to be placed in the British context of the late 1990s and 2000s. This setting lends itself to answering the questions of this thesis, given the presence of a negative educational gradient in divorce, also when focusing on female education (Berrington & Diamond, 1999; Chan & Halpin, 2005; Cooke & Gash, 2010). Given the concentration of research in the area on the United States, it is interesting to focus on a European country that has also experienced rising income inequality over several decades (Gottschalk & Smeeding, 1997; Esping-Andersen, 2005). Studying cross-national variation might give new insights into the determinants of the gradient of divorce in general. In Britain too, changes in family structure have disproportionately affected the socio-economically disadvantaged and relative poverty among single-mothers is very high in comparison to other countries (Esping-Andersen, 2007). Increased family polarization is thus also visible in Britain, and an understanding of the relationship between resources and union stability is therefore relevant.

The context of Britain differs in some aspects from other countries. Levels of income inequality are in general higher than in other European countries and welfare support is in general means-tested and not as generous (Esping-Andersen, 2005). Despite its more liberal policy context, couple behavior in Britain is not yet as

egalitarian as in some other European countries and the U.S. While few households operate according to a traditional division of labor, there also do not exist many couples that divide both paid and unpaid labor equally (Esping-Andersen et al., forthcoming; Sullivan & Gershuny, 2003). This reflects both lower levels of full-time labor force participation by women, and less participation in domestic work by men.

Variation also exists within Britain. The data used in this study include households from England, Northern-Ireland, Scotland, and Wales (even though the samples have only been part of the panel since 1999 for Scotland and Wales, and 2001 for Northern Ireland). Especially in Northern Ireland the level of divorce has been rising more recently compared to the other regions. While differences in divorce law existed, they were very similar in the different regions already at the start of the observation window of this study (Smith, 1997). People are able to divorce based on "irretrievable breakdown", which comprises 'unreasonable behavior', adultery, and desertion. If none of these situations occur, couples have to be separated for 2 years before a divorce can be approved, but only after mutual consent of the couple. After 5 years of separation also uni-lateral no-fault divorce is granted. To make sure I captured the processes leading up to the dissolution of the relationship rather than the official divorce date, I used the date of separation instead of divorce in all of the chapters as the moment of break up. After divorce, any capital or property that the couple accumulated during the marriage will be divided based on the duration of the relationship, who will take care of the children and the income

situation of each member of the couple. While these rules are common to the different regions of the study, there are likely to still be other socio-economic differences between them that could affect divorce risk. While these differences are not investigated in this thesis, I do control for region in the models of the different empirical chapters.

Another choice that affected my sample was the inclusion of unmarried cohabiting couples in two of the three empirical chapters. Chapter 1 regards the relationship between divorce and female education in general. To make Chapter 1 fit with earlier studies the sample has been restricted to marriages only. However, Chapters 2 and 3 aim to uncover specific relationship processes at play rather than that the aim is to give an exhaustive overview of what explains the relationship between resources and divorce. In those cases, therefore, the inclusion of cohabiting couples can give additional insight into how relationship processes work. Marrying your partner implies an explicit long-term commitment and thus an investment in the relationship. Comparing married couples with cohabiting couples can therefore shed light on the role of investments in the relationship. Given the importance of barriers to divorce in this thesis, those insights could be very valuable. For the same reasons Chapter 1 only includes first marriages while the other two also include higher order marriages.

The variables included in the analysis differ by chapter, but one variable common to all three chapters is of central importance for the general motivation of this thesis: marital satisfaction. As

outlined above, marital satisfaction is central to Goode's argument regarding the turnaround in the educational gradient of divorce. Once variation in barriers becomes smaller, variation in marital satisfaction becomes more important. To test this hypothesis it is essential to be able to disentangle effects that come through direct returns from the relationship (i.e. marital satisfaction) from effects that go through barriers to divorce. It is problematic that most variables included in studies on divorce could both affect the direct returns from the relationship as well as the barriers to divorce (e.g. gender norms, children, and socio-economic disadvantage in general). In this thesis I therefore distinguish between effects that are mediated by marital satisfaction and direct effects of variables on divorce risk. This will allow me to determine whether variables affect divorce risk by improving the quality of the relationship (if mediated by marital satisfaction) or by altering the barriers to divorce (if not mediated by marital satisfaction, in some cases it will be attempted to measure barriers directly). To get a good understanding of how different variables are interconnected I follow a stepwise estimation procedure. In addition, Chapters 1 and 2 also contain a path model estimated as a Structural Equation Model (SEM), to be able to simultaneously estimate mediated and direct effects on divorce.

The measure of marital satisfaction was based on the question "How satisfied are you with your spouse/partner?", which was asked of both partners of the couple individually, allowing the identification of relationship satisfaction of both partners. Answers were given on a scale ranging from 1 = *not satisfied at all* to 7 =

*completely satisfied*. Earlier studies have used many different measures for marital satisfaction. The weakness of the one used in this study is that it only consists of one question. At the same time, the question used is closest to the concept of marital satisfaction, which is the overall evaluation of the relationship a person has (Fincham & Rogge, 2010). In addition, the question has empirically been shown to be one of the most informative measures of relationship satisfaction (Funk & Rogge, 2007). While thus a valid measure, in an ideal setting more questions would have been used to measure the overall evaluation of the relationship in order to increase the reliability of the measure. Unfortunately, these were not available in the dataset.

The methods used in this study are longitudinal in nature and take into account the characteristics of the couple before separation. Please see each chapter individually for the specific methods used. What is common to all chapters is that several robustness checks were done to reduce the chance that the conclusions were not driven by the methodological choices made. Multiple specifications of dependent and key independent variables were used in each chapter, and different sample restrictions were used to look at how sensitive results were to the inclusion and exclusion of cases. In most cases, results remained unaltered; in other cases, results changed but were not of key importance to the conclusions of the chapters. If changes were found due to these robustness checks they are reported with the corresponding results. In all three chapters missing data has been taken into account and multiple imputation was employed using 20 imputed datasets for the estimation of all results that had

missing data on independent variables. In the chapters that follow more detailed information is given on these and other methodological choices made.

## Outline

Chapter 1 of this thesis was chronologically the second paper I wrote. However, this paper provides a literature review that fits most closely to the general framework of the thesis outlined above. In this chapter the question is addressed what can explain the negative educational gradient in divorce for females. The chapter will start out by giving an overview of the determinants of divorce risk in general, and how these variables could explain the negative educational gradient of divorce for women. The empirical part commences by looking at differences in marital satisfaction trajectories between educational groups. The results indicate that, surprisingly, no differences in marital satisfaction trajectories exist between educational groups whatsoever. The rest of the chapter focuses on the question, if not marital satisfaction, what then? I estimated several discrete-time event history models that point at the role of economic and moral barriers to divorce as the main determinant of the socio-economic gradient in divorce for women. Home ownership in particular seems to explain most of the gap in divorce risk between educational groups.

Where Chapter 1 gives a general indication of how important different pathways are when explaining divorce risk, Chapter 2 aims

to show whether, in fact, a causal effect exists between resources and breaking up, and to uncover the causal chain through which resources operate. I use information on lottery wins to look at the effects of temporary income on separation risk and whether these effects differ by gender. The article starts out by investigating whether, overall, a causal effect can be observed of income by comparing small to bigger winners. The results indicate that lottery wins reduce separation risk, but only when men win. Lottery wins reported by women did not alter the odds of breaking up. The article shows that when men win, they start spending more on leisure time and eating out, which increases satisfaction with their social lives and leisure time. When women win, the money is saved or spent on durables, which are expenditures that do not affect satisfaction with any domain of life. Despite these observations, overall, the biggest part of the effect of lottery wins on separation risk is not mediated by marital satisfaction or any of the other variables included in the study.

The findings of Chapters 1 and 2 showed the relative unimportance of marital satisfaction once explaining the effect of resources on divorce risk. This suggests that those with fewer resources separate at higher levels of marital satisfaction than the resourceful. The question therewith arises what determines the level of marital satisfaction at which people break up. In Chapter 3 I focus on one specific case that is particularly interesting, I look at the motives for relatively satisfied couples to break up. I start out by reviewing possible explanations for this apparently illogical course of events. Very little research exists on the issue, and the empirical part is



therefore aiming at a general examination of the validity of a broad set of hypotheses rather than testing select concrete hypotheses. Competing risk event-history models are estimated to look at the relative risk of leaving a satisfying relationship compared to not breaking up, and to leaving an unsatisfying relationship. The models show, surprisingly, that variables indicating barriers do affect separation risk in general, but are not related to the level of satisfaction the year before breaking up. Instead, the alternatives to the relationship of the husband and his score on the personality trait “agreeableness” seem to matter for the dissolution of relatively satisfying relationships. These findings, combined with the observation that overall life satisfaction of these couples does not return to initial levels, question whether these couples would have been better off if they would not have left each other.



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## Chapter 1:

# The negative female educational gradient of divorce: marital satisfaction, barriers to divorce, and the life course

*Co-authored with Juho Härkönen*

### Abstract

*Half a decade ago, William Goode (1962; 1963) predicted that what was then, in most countries, a positive association between class and divorce, would gradually disappear and eventually become a negative class gradient of divorce. Recent research on the links between female education and divorce has increasingly supported this hypothesis, providing a rare case of a reversing association between sociological variables. This increasing divorce gap is one example of “diverging destinies” (McLanahan 2004) in which potentially disadvantageous family dynamics become more common among those with the lowest socioeconomic resources. Yet there is very limited understanding of what drives these trends, particularly since most commonly used theoretical frameworks predict a positive effect of wives’ human capital on divorce.*

*In this paper, we look for explanations for the negative educational gradient of divorce in Britain. We use data from the British Household Panel Survey (BHPS), which provides rich information for testing different hypotheses of the mechanisms behind the association between female education and divorce. We find that the*

*educational differences in divorce are the strongest during early stages of marriage. Contrary to expectations, we find no indications that marital satisfaction and quality differs by educational level, nor that the decline in marital satisfaction is steeper among the less educated. Instead, we find indications that women with higher levels of education have higher barriers to divorce. These women are more likely to live in a couple that owns their house (and thus have made joint investments with the husband), which suppresses the risk of divorce. They are also more likely to have divorced parents, which might point at the role of values or moral barriers to divorce. Significant effects were found for husband's employment, deprivation and alcohol or other drug-related problems of the husband too. But most of these effects seemed mediated by marital satisfaction and nullified by other unidentified processes at play. Therefore, highly educated women have in many ways more to lose by divorcing, leading them possibly to endure less satisfying marriages longer. This finding conflicts with many often implicit understandings of the relationship between education and divorce. We discuss the potential implications of these findings.*

In the early sixties, William J. Goode predicted that during the course of modernization, the barriers to divorce would diminish and the initially positive relationship between social class and divorce would gradually weaken, and eventually reverse (Goode 1962; 1963). Half a decade later, a growing body of evidence has accumulated in support of Goode's prediction, in particular concerning the female educational gradients of divorce. In the United States, lower education—both for men and for women—has been associated with increased divorce risks already for long (Bumpass and Sweet 1972; Martin 2006). In other countries, the situation has been different. Blossfeld and associates (1995), for example, showed how the relationship between female education and divorce was positive and strong in Italy, weaker but still positive in West Germany, but not significant in Sweden. Positive or no relationships between female education and divorce in earlier periods have also been found in other countries (Härkönen and Dronkers 2006).

More recently, however, studies from several countries have reported that this association has shifted. The initially positive gradient has reversed to a negative one in Sweden (Hoem 1997), the Netherlands (De Graaf and Kalmijn 2006a), Japan (Raymo, Iwasawa and Bumpass 2004), South Korea (Park, Raymo and Creighton 2009), Taiwan (Chen 2012), and the United Kingdom (Chan and Halpin 2005). The positive gradient has disappeared in Italy (Salvini and Vignoli 2011) and in Spain (Bernardi and Martínez-Pastor 2011a; 2011b). More generally, the female educational gradient of divorce has become increasingly negative

(although from different starting points) also in Flanders, France, Hungary, Lithuania, and Poland (Härkönen and Dronkers 2006), and is now clearly negative in Finland (Jalovaara 2001), and Norway (Lyngstad 2004). In the United States, the educational gaps have opened further, with the highly educated leading the way to increased marital stability (Martin 2006). To the extent that divorce has adverse consequences for divorcees and their children, these negative educational gradients have the potential to strengthen existing educational inequalities within and across generations (McLanahan and Percheski 2008).

These trends provide a rare example of reversing associations between sociological variables. Yet they remain poorly understood (Amato 2010: 661). Goode's macro-level prediction of changes in the gradients due to lowering of the barriers to divorce has received some support (Härkönen and Dronkers 2006). However, it is less clear which individual and couple level factors are responsible for negative female educational gradients in divorce, and even less clear how they can be used to explain the observed changes.

Theoretical approaches to explaining the effects of educational attainment on divorce have largely begun from economic perspectives which emphasize the division of labor within households and according to which men's socioeconomic resources (including education) stabilize marriages, whereas women's resources increase marital instability (Becker, Landes and Michael 1977; Becker 1981). Although a negative male educational gradient has been reported in almost all studies (Lyngstad and Jalovaara



2010), the reversal of the association between female education and divorce undermines the value of this explanatory model (for a famous critique of the economic model of the family, see Oppenheimer (1997)). Therefore, many studies have looked for cues from the other resources—including social, intellectual, and relationship skills—which are expected to be associated with higher education.

The objective of our study is to deepen the understanding of the mechanisms underlying the current negative female educational gradients of divorce. We analyze marital dissolution in the United Kingdom, which as mentioned, now has a negative association between female education and divorce (Berrington and Diamond 1999; Chan and Halpin 2005; Cooke and Gash 2010). Compared to many other countries, the United Kingdom additionally provides data (the British Household Panel Survey) which are well-suited for examining the different explanations to the current patterns.

Our approach to improve understanding of the negative female educational gradients in divorce is the following. Building on social exchange theory (Levinger 1965; 1976), we hypothesize that the negative association between female education and divorce depends on educational differences in marital quality and satisfaction (costs and rewards to a particular marriage), barriers to divorce, or alternatives to the marriage. Theoretical approaches to education and divorce have stressed these aspects differently. We look into demographic behaviors, economic factors and relationship skills and behaviors as alternative explanations, which can mediate the

effect of education on divorce through the three abovementioned aspects. We also discuss how these factors may affect the divorce risk differently at different stages of the marital life course.

We then test the explanatory power of our different variables using data on 1,587 first marriages from the British Household Panel Survey (BHPS) for the years 1996 to 2009. The BHPS is a general population household survey. For our purposes, a major advantage of these data is their wide coverage of questions, ranging from socioeconomic factors to marital satisfaction and indicators of personal and social stressors. We use Kaplan-Meier estimates to describe the survival and divorce risks of marriages of women with different educational qualifications and describe their marital satisfaction trajectories. We then analyze our data using discrete-time event history modeling and test the role of the different explanatory variables in a Structural Equations Model (SEM). The last section of the paper concludes and provides a discussion of our findings in light of the changing educational gradients of divorce.

### Costs and rewards, barriers, and alternatives

Many sociological accounts of divorce begin from social exchange theory (e.g., Levinger 1965; 1976), which approaches the decision to remain in or leave a marriage based on the rewards and costs associated with that marriage, the legal, moral, and economic barriers to divorce, and the available alternatives to the marriage (singlehood or alternative partners). From the point of view of this

framework, one can expect that the currently negative female educational gradients in divorce come about through educational differentials in one or several of these aspects. In the following, we first briefly discuss these different aspects and then go through demographic, economic, relationship skill and life course explanations to educational differences in divorce. These can shape marital quality and satisfaction (the rewards and costs of marriage), the barriers to ending the marriage, and the opportunities outside it. In line with our research question, we focus primarily on those mechanisms which would explain why women with less education are more likely to divorce.

When the rewards to a marriage decrease and costs associated with it increase, marital quality and satisfaction decline. Therefore, unsurprisingly, marital satisfaction is a strong predictor of divorce (e.g., Karney and Bradbury 1995). Marital satisfaction shows a general decline over the marital life course (White and Booth 1991; Glenn 1998; VanLaningham, Booth and Amato 2001; Umberson et al. 2005). Levels and trajectories of marital satisfaction are affected by various proximate and more distal factors. The former include marital interactions, marital conflict and violence, and personality traits of the spouses (Karney and Bradbury 1995; Bradbury, Fincham and Beach 2010), whereas the latter include childbirth and children's departure from the parental home (Umberson et al. 2005) and social and economic stressors, such as income levels and unemployment (Conger, Conger and Martin 2010).

If differences in marital satisfaction explain the educational gradients of divorce, the focus of interest then turns to explaining these inequalities in satisfaction. Few studies have analyzed educational gradients in marital satisfaction, and some of these do find that the highly educated tend to be more satisfied with their marriages (Conger, Conger and Martin 2010; Isen and Stevenson 2010; Halliday Hardie and Lucas 2010). In a review of existing research at the time, Karney and Bradbury (1995) found that educational attainment was not considered in many studies, and its effects were generally weak (though positive) and well below in importance compared to more proximate predictors. To our knowledge, no previous studies have focused on differential trajectories in marital satisfaction. Given the associations between educational attainment and many of the known predictors of marital satisfaction, it is plausible to expect educational differentials both in marital satisfaction levels and trajectories.

Not all marriages characterized by low satisfaction end in divorce. Likewise, a significant share of divorces do not end particularly distressed marriages with low levels of marital satisfaction (Amato and Hohmann-Marriot 2007; Amato 2007; 2010). These patterns are often explained by reference to “commitment”, which has been conceptualized to include—besides committing to the specific spouse—moral, economic and other barriers for ending the union (e.g., Johnson, Caughlin and Huston 1999). These barriers can, again, show differences by educational level. Resources associated with education can both strengthen these barriers and help in overcoming them. First, they can affect “joint investments” into the

marriage, such as house purchases and children, which are generally seen as lowering divorce risks (Becker 1981; Spitze and South 1985; White and Booth 1991). High resources of the spouse can act as a barrier to divorce as divorce from such a spouse means losing access to these resources (cf. Oppenheimer 1997). At the same time, social and economic resources, such as education, can improve the possibilities for handling the potential legal and moral sanctions associated with divorce (Blossfeld et al. 1995; Härkönen and Dronkers 2006), although their importance could be expected to have become weaker (Goode 1962; 1963).

The economic resources associated with education increase the chances of independent living outside the marriage. Education and other resources can, finally, be associated with access to alternative spouses, even though existing research suggests little educational differences in re-marriage rates (De Graaf and Kalmijn 2003).

### *Demographic factors*

Highly educated women enter marriage at an older age (for Britain, Berrington and Diamond 2000), and age at marriage is positively associated with marital stability (Amato et al. 2007; Glenn, Uecker and Love 2010; Lyngstad and Jalovaara 2010). Common explanations of the latter include greater (psychological and socioeconomic) maturity, potentially more reasonable expectations, a longer search period resulting in better matches, and worse outside options to the current marriage. Glenn, Uecker and Love

(2010) found that American marriages contracted at later ages tend to fare relatively poorly in marital quality, thus stressing barriers and alternatives as a likely explanation for the relationship. The educational differences in age at marriage and the association of the latter with marital stability have been used to understand educational differentials in divorce. However, findings suggest that although age at marriage explains a part of the negative female educational gradient in divorce, the latter remains statistically significant even after adjusting for the former (Härkönen and Dronkers 2006; Martin 2006).

In a similar vein, some studies have proposed that lower likelihood of marriage among highly educated women in some countries may explain the negative educational gradients of divorce, as the highly educated who actually marry may be positively selected on factors conducive to marital stability. However, Bernardi and Martínez-Pastor (2011b) concluded that selection into marriage did not explain the weakening of the educational gradient of divorce in Spain. Furthermore, this explanation cannot hold in countries such as the United States, where the lifetime probability of marriage is higher among highly educated women (Goldstein and Kenney 2001). Likewise, premarital cohabitation and premarital pregnancies and childbearing predict divorce (Lyngstad and Jalovaara 2010), and the latter in particular are more common among the less educated (Berrington and Diamond 2000).

Another reason why highly educated women may have lower divorce risks is that they are more likely to marry highly educated

men, and as mentioned in the introduction, men's socioeconomic resources (including education) decrease divorce risks. This can come about both by affecting marital satisfaction and the barriers to divorce. As discussed below, economic stressors are a strong predictor of marital functioning and satisfaction. Given the continuously gendered household division of labor, men's socioeconomic resources are expected to strengthen his provider role and the expected role configurations within families (Becker 1981). Whether this translates into more or less stable families can vary cross-nationally (cf. Cooke 2006), and some studies have found that the negative female educational gradient of divorce persists after the husband's education is taken into account (Jalovaara 2002; 2003). In addition to socioeconomic ones, husband's education may also provide other resources which stabilize marriages. For instance, higher educated men have been found to contribute more time to childcare tasks than other men (McLanahan 2004; Cooke 2006).

Parental divorce is associated with lower educational attainment (e.g., Amato and James 2010), which means that women with higher education are less likely to be children of divorce. Parental divorce is additionally related to higher instability of own marriages (Dronkers and Härkönen 2008), suggesting that parental divorce may provide insights into the educational gradients of divorce. Again, however, the educational gradients of divorce do not generally disappear after controlling for parental divorce (Härkönen and Dronkers 2006).

### *Economic factors*

An obvious reason why less educated women now have higher divorce rates points to economic factors, which can affect marital stability both through marital satisfaction and the barriers to divorce. Goode himself built his argument primarily on the financial and other marital strains experienced by the lower classes. The declining barriers to divorce would increasingly permit these strains an expression in divorce (Goode 1962; 1963: 85-86). Additionally, lower education is in many countries increasingly associated with poorer labor market prospects and economic insecurity. According to the family stress model, economic stressors affect the emotional distress of the spouses and the resulting interactions between them (e.g., Conger et al. 1990; Conger and Elder 1994; Conger, Rueter and Elder 1999). Several studies have reported supporting evidence by showing how economic stressors are a common source of conflict among couples and have predictable effects on marital quality and satisfaction (Conger, Conger and Martin 2010; Halliday Hardie and Lucas 2010). Numerous studies have correspondingly shown how unemployment, especially of the husband, predicts a higher risk of divorce (South and Spitze 1986; Jalovaara 2001; 2003; Lyngstad and Jalovaara 2010). As discussed above, wives' employment and economic resources have traditionally been seen as conducive of marital instability (Lyngstad and Jalovaara 2010; Özcan and Breen 2012), but a growing number of studies have



shown that female unemployment is now related to higher divorce risks in many countries (e.g., Jalovaara 2001; 2003).

Women's economic resources have most commonly been seen as increasing divorce through lowering their barriers for exiting relationships. The commonly-cited "independence hypothesis", for example, has built on economic views on marriage and views female education, employment and earnings as resources that decrease women's economic reliance on their husbands (Becker, Landes and Michael 1977; Becker 1981; Oppenheimer 1997; Özcan and Breen 2012). Clearly, however, this perspective fails to explain the negative educational gradients of divorce. In a famous critique of this hypothesis, Oppenheimer (1997) postulated that given the economic insecurities in current labor markets, men also have to gain from their wives' economic resources (even though she used this argument mainly in the context of marriage formation). In other words, men may have more to lose by leaving their resourceful wives; in the same way, highly educated women, who more often have highly educated husbands can have higher costs of divorce.

Highly educated couples may additionally have other economic assets that increase the barriers to divorce. Joint investments, such as home-ownership, are generally seen as a barrier to divorce (Becker 1981) and shown also empirically to be associated with lower divorce risks (South and Spitze 1986; White and Booth 1991; Cooke 2006). In Britain, socioeconomic lines differentiate the likelihood of home ownership (Ermisch and Halpin 2004).

### *Relationship skills, personality, and values*

Poor relationship skills—such as communication styles, lack of ability to compromise, or negative affect—have been shown to predict divorce in numerous studies (e.g., Amato and Rodgers 1997). Some studies on negative educational gradients of divorce have speculated that these may account for some of the observed patterns (Levinger, 1965; Blossfeld et al. 1995; Härkönen and Dronkers 2006). Unfortunately, there is limited direct evidence for educational differences in relationship skills and behaviors. Amato and Rodgers (1997) found that education predicted lower levels of jealousy and substance use, whereas Amato (1996) did not find education to predict (however, once other variables had been controlled for) problematic interpersonal behaviors. A related small literature has looked into how personality traits affect marital satisfaction and divorce (Donnellan, Conger and Bryant 2005). Boertien and associates (2012) built on this literature to analyze whether personality would mediate the educational gradients in divorce in Germany. Their findings suggested that traits, such as openness to experience, which predict a higher risk of divorce are more common among the highly educated, thus undermining the usefulness of this explanation for understanding the negative educational gradients of divorce. Finally, Levinger (1976) speculated that the highly educated might have more positive attitudes toward divorce, which could increase their proneness to dissolve their marriages. While this might have fit the social reality of the 1970s, nowadays the highly educated are less approving of divorce, at least when young children are involved (Rijken and

Liefbroer 2012). There might also be religious differences by education that affect the moral barriers to divorce. Similarly, having a traditional division of labor reduces divorce risk in more traditional settings, but seems associated with more stable relationships in more egalitarian institutional contexts (Cooke, 2005). The lower educated usually have a more traditional division of labor (Esping-Andersen & Bonke, 2011), which could therefore have stabilized relationships in past decades, but destabilized unions in today's relatively more gender egalitarian settings.

### *The marital life course*

The risk of marital dissolution generally increases during the first years of marriage, reaches a peak, and subsequently decreases (Thornton and Rodgers 1987; Lyngstad and Jalovaara 2010). The initial increase has been explained by reference to a learning process during which spouses learn common marital life and new features of their partners and their mutual combatibility, and during which marital satisfaction generally falls, as discussed above. Suggested reasons for the secular decline at later durations, on the other hand, include the selective attrition of less fitting couples across time (Thornton and Rodgers 1987), a further mutual learning process between the spouses, and increasing barriers through common social networks, children, and material and non-material investments to the marriage (Becker, Landes and Michael 1977; Booth et al. 1986; White and Booth 1991). Since marital satisfaction generally continues to decrease, the stabilization of

marriages at higher durations points to an increasing role played by barriers to divorce and a possible (lack of) alternatives.

Various studies have found that the educational differences in divorce are the largest during the first years of marriage (Morgan and Rindfuss 1985; South and Spitze 1986; Lynn and Booth 1991; South 2001; Jalovaara 2002), and these can provide important insights into the reasons which produce the educational gradients in divorce (Morgan and Rindfuss 1985). Given the importance of age on marital dissolution and the positive relationship between education and age at marriage, the highly educated are older at shorter marriage durations than those with lower education. They might be emotionally more stable and due to their more advanced stage in the life course, experience fewer de-stabilizing life events, such as unemployment or residential moves. A related reason can be that women with higher education can be more likely to have made common investments such as housing (Ermisch and Halpin 2004), which then construct barriers to divorce; moreover, they may have done so at earlier stages (or before) the marriage, given their higher incomes and the later stage of the life course in which they generally marry.

Spousal roles tend to develop during the course of marriage, and there can be sufficient educational differences in these developments to contribute to educational differentials in divorce at different durations (South 2001). A common tendency is for these roles to develop towards more conservatism and traditionalism, in particular after the arrival of children (Grunow, Schulz and

Blossfeld 2012). First, there can be educational differences in timing of marital childbearing, and second, highly educated women and their partners can be better equipped to handle these changes, particularly if the spouses of higher educated women are more ready to take on more responsibility for childcare (McLanahan 2004; Cooke 2006). Finally, higher age can also limit the alternatives to the current marriage.

## Data and method

We use data from the British Household Panel Survey (BHPS), a representative longitudinal household survey of the British population which annually interviews all individual members of a sample of British households. The first wave dates from 1991. We begin our observation window from 1996, which was the first year when respondents were asked about marital satisfaction, and the observation window extends till 2009. During this period of observation 1,587 couples were married for the first time and provided information on the three key variables of this study (i.e. divorce, education and marital satisfaction) for 7,679 couple-years. For the sample, all heterosexual couples who were married or entered into their first marriage during the observation period were selected. Only the first fifteen years of the marriage were taken into account in order to not include marriages from older cohorts and to limit the educational groups studied from becoming too selective due to couples divorcing. Some marriages had already begun before our observation window and dropping them out of the analysis

would have restricted the number of marriages further. Therefore, we included these (left-truncated) marriages and set the duration of their marriage accordingly for the event-history analysis (Guo 1993).

### *Measures*

Our dependent variable is divorce. Couples were coded as experiencing a divorce when they reported either a separation or a divorce, conditional on being married (and not separated) the previous year. 9.3% of the sample experienced a divorce during the observation window used in this study.

Our main independent variable is the years of education completed by the interview date, and is thus a time-varying independent variable. We chose a continuous specification of education, which fit the data better than a categorical one (coded into three categories: low (ISCED 0-2), middle (ISCED 3-4), and high (ISCED 5-6)). Our results were robust to the specification. Other variables included in all models are marital duration (linear and squared), calendar year, and interactions between wife's education and the marital duration parameters (to examine differences in the divorce hazard by duration). To match the development of the hazard to divorce, duration was measured by three dummies indicating less than 5, between 5 and 10 and more than 10 years of being married.

Marital satisfaction was measured using the question "How satisfied are you with your spouse/partner on a scale ranging from 1 = *not*

*satisfied at all to 7 = completely satisfied?*” The question was asked individually to both partners of the couple, allowing the estimation of marital satisfaction of both wives and husbands. Our variable carries the limitation of being based on a single question. Ideally multiple measurements to increase reliability would be desirable. However, it is regarded as the best single measure of marital satisfaction, both conceptually and empirically (Funk & Rogge, 2007; Fincham & Rogge, 2010). We treat the variable as continuous, in line with most other studies using this measure (Amato & Hohmann-Marriot, 2007; Schoen et al., 2006). Robustness checks were done using alternative specifications of the variable (i.e. a logged version and a dummy of values 6 and 7 versus the rest), but they did not change results. The same was the case for taking into account not just marital satisfaction in that year, but also larger parts of the marital satisfaction trajectory (i.e. the inclusion of lagged variables).

To assess the explanatory power of different mechanisms, we included intervening variables into the models one by one. Only variables that turned out to be related to both education and divorce risk were used in the final models. First, we included the following demographic variables: the number of children in the household, whether a child under 4 years of age was present; whether the couple cohabited before marrying; whether the couple had children before marrying; the education of the husband; whether the wife’s parents divorced during childhood; and the wife’s age at marriage.

Second, we used a block of labor market variables: dummies for unemployment of both husband and wife. Unusual working hours of the wife were measured by a dummy indicating whether she had a work schedule that was not labeled as “just mornings” or “mornings and afternoons” and.

The third group of variables reflects the financial situation of the household: logged household income in 2005 prices; her share of labor income; and a deprivation index. The deprivation index is based on 6 questions about whether a household could afford to do things such as “eat meat on alternate days” or “to replace furniture”.

The fourth block consisted of measures capturing investments done by the couple: whether the house was owned by one person in the household; whether this was a shared ownership with the spouse; and measures of the interest they received on his and her savings. Five response alternatives were given (none, under 100, 100-250, 500-1000, and more than 1000), and we treated the variable as continuous with the middle points of the categories as values.

The last block of variables consisted of measures of the gender norms of women, her frequency of going to church (1 = weekly; 0 = less or never), a dummy whether he reported any alcohol or other drug related problems, the share of housework she does, and the share of singles in a person’s region and age group. Gender norms are measured by a standardized scale based on eight questions that measure the respondents’ views on gender roles and other issues related to family life (Cronbach’s Alpha = .68). The share of single people in a person’s age group and region was used as the indicator



of the marriage market and alternatives available to a person. Region was based on a classification of 19 regions provided by the BHPS. A person's age group was defined as individuals up to 7 years older and 3 years younger for women and up to 3 years older and 7 years younger for men. Different age groups were defined for men and women because on average the age of the man is higher than that of the woman in relationships (see descriptive statistics in Table 1).

Missing values on all variables but education, marital satisfaction, duration and divorce were multiply imputed using 20 datasets. Table 1 displays the characteristics of the sample used in this study.

### *Method*

Our analytical strategy consists of three main steps. First, in the descriptive analysis we examine the Kaplan-Meier survival estimates of divorce and its hazards (risks) by marital duration. We also examine whether marital satisfaction trajectories differ by educational level. In the descriptive part of the analysis, we use a categorical education variable, identifying those with low (ISCED 0-2), middle (ISCED 3-4) and high (ISCED 5-6) levels of education. In the second part of the analysis, we test whether the educational gradient of divorce (assessed using a continuous measure of education) can be explained by marital satisfaction. We use marital satisfaction as a proxy for the "attractions" (costs and rewards) to a specific marriage, which in Levinger's (1965; 1976)

framework is one of the core aspects behind the divorce decision. Marital satisfaction can also be measured directly, and were it to explain the educational gradient, the focus of analysis would switch to that. As seen below, this was not the case, which we interpret as reflecting a stronger role for barriers for exiting and alternatives to the marriage. We then, third, move on to analyzing whether the variables discussed above—entered in a stepwise fashion—can explain the gradient. Finally, we present three models with the significant variables from the previous regressions, two without and one with marital satisfaction.

*Table 1. Descriptive Statistics for the Sample*

|  | Average                            | SD   | Min. | Max.  |
|--|------------------------------------|------|------|-------|
| Wife's education in years                  | 13.5                               | 2.3  | 9    | 17    |
| Husband's education in years               | 13.7                               | 2.3  | 9    | 17    |
| % Wife unemployed                          | 1.6%                               |      |      |       |
| % Husband unemployed                       | 2.5%                               |      |      |       |
| % Cohabited before marriage                | 59.1%                              |      |      |       |
| % Child before marriage                    | 20.5%                              |      |      |       |
| Ln(Annual household income)                | 10.4                               | 0.58 | 0.46 | 14.03 |
| Her share of labor income                  | 0.30                               | 0.24 | 0    | 1     |
| Gender norm scale                          | 0.10                               | 0.51 | -2   | 1.63  |
| Her age – his age                          | -2.28                              | 4.62 | -30  | 14    |
| Wife's age at marriage                     | 27.9                               | 6.34 | 16.5 | 77.8  |
| Number of children in household            | 1.30                               | 1.09 | 0    | 7     |
| Duration of relationship                   | 6.65                               | 4.61 | 0    | 16.0  |
| Her satisfaction with partner/spouse       | 6.27                               | 1.11 | 1    | 7     |
| Divorce                                    | 1.93%                              | 0.14 | 0    | 1     |
| Her interest on savings                    | 116.9                              | 307  | 0    | 1500  |
| Husband with reported alcohol/drug problem | 0.34%                              |      | 0    | 1     |
| House owned by one of the spouses          | 84.0%                              |      | 0    | 1     |
| Deprivation index                          | 0.09                               | 0.15 | 0    | 1     |
| <i>N</i>                                   | 7 679 couple-years (1 587 couples) |      |      |       |

The analyses of the second and third parts build on discrete-time event history modeling (Yamaguchi 1991), which is suitable given the annual measurements in our data. Once data are reorganized to the appropriate person-year form, the model can be estimated using logit regression:

$$\text{logit}(\text{div}_{it} \mid \text{div}_{i(t-1)} = 0) = \alpha + \beta_1 \text{educ}_{it} + \beta_2 t_{it} + \beta_3 t_{it}^2 + \beta_4 \text{educ}_{it} * t_{it} + \beta_5 \text{educ}_{it} * t_{it}^2 + \beta_6 X_{it} + \varepsilon_{it}$$

where *educ* is education in years, *t* is marriage duration, and *X* a vector of control and intervening variables. All the models also include interactions between education and marital duration. Groups of *X* variables (including marital satisfaction) were entered stepwise to test the contributions of the different families of mechanisms for explaining the educational gradients of divorce. Variables that turned out to be related to both education and divorce risk were entered into one event-history model explaining divorce risk. To get insight into how the different variables were related, the variables significant in that model were included as endogenous variables in a path model estimated in a Structural Equations Model setting, using the statistical package MPlus and treating the dependent variable divorce as dichotomous. Exogenous variables in these models were education, duration, region and calendar year.

A problem with the analyses could be that due to different divorce risks the lower-educated could become a more selective group of more stable marriages at longer durations of relationships. To get insight in the possible influence of this bias the analysis was limited to the first fifteen years of marriage, and robustness checks were

done with an even shorter time-frame (ten years), these checks did not change results.

## Results

The first two figures present the survival and hazard curves, respectively, of divorce by educational attainment. These show what previous studies from Britain have already found: less educated women have lower marital stability. The educational gradient of divorce is the clearest during the early years of marriage, in line with results from other countries (Morgan and Rindfuss 1985; South and Spitze 1986; White and Booth 1991; Jalovaara, 2002). Highly educated women have notably low risks of divorce during the first marital years, but they increase over time. Less educated women, on the other hand, have high divorce risks during the first years, and for the least educated, these peak early at around 4 years of marriage. Five years after the wedding, 15.5 % of the marriages of the least educated had dissolved, compared to 9.8 % of those with middle education and only 2.4 % of those with the highest levels of education; 10 years after the wedding, the respective figures were 25.4 %, 17.5 %, and 7.4 %. We tested for the difference in the survival curves with the Wilcoxon test (which stresses differences at early durations) and log-rank test (late durations) and both were statistically significant at the 0.1 % level.

Figure 1. Kaplan-Meier curves for divorce by wife's education

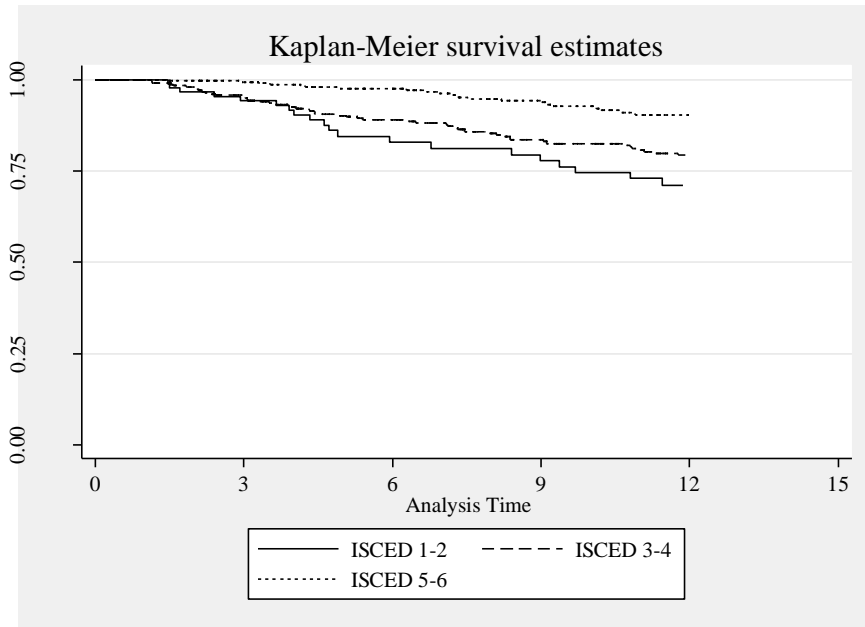


Figure 2. Smoothed hazard estimates for divorce by wife's education

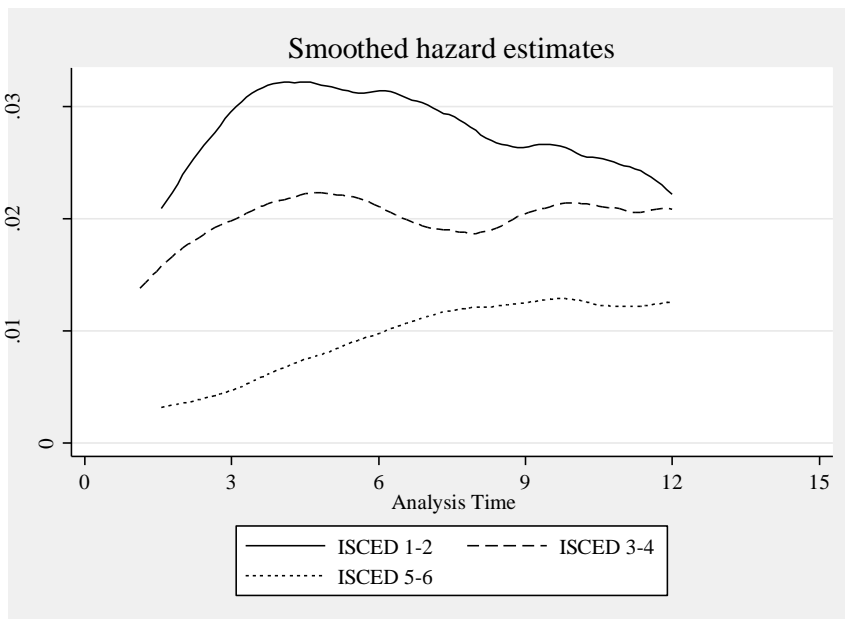


Figure 3. Marital satisfaction trajectories of wives by her education

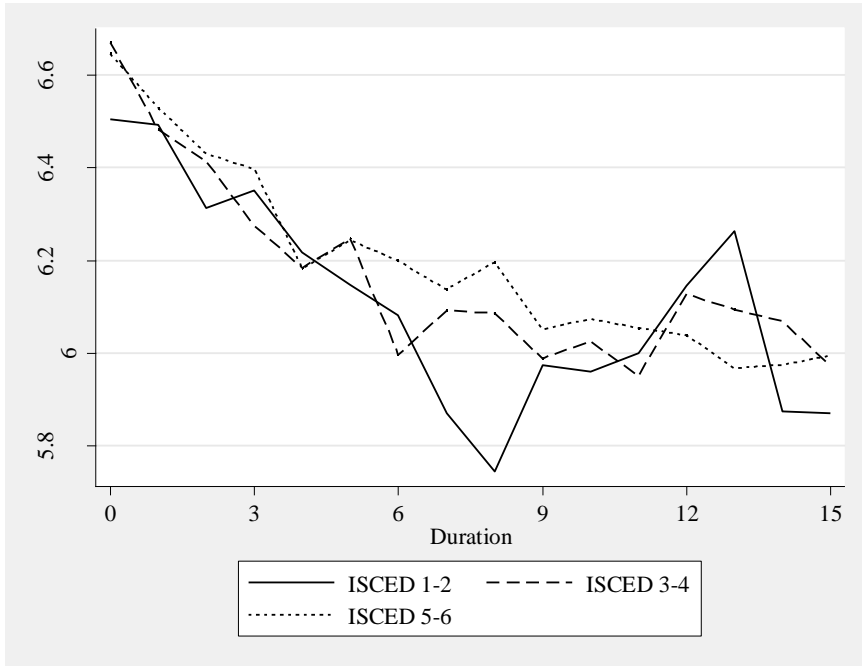
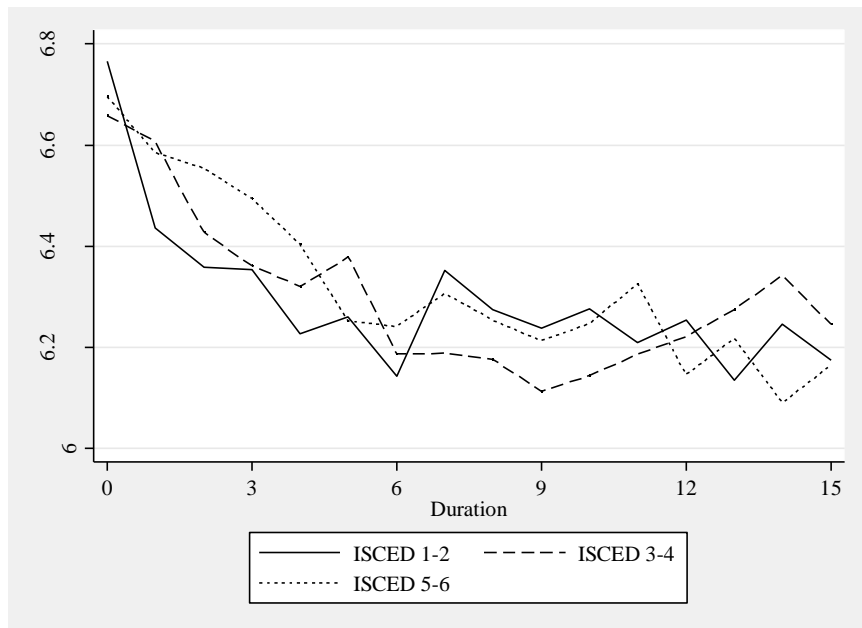


Figure 4. Marital satisfaction trajectories of husbands by wife's education



Figures 3 and 4 show the average marital satisfaction trajectories of wives and husbands, respectively, according to the education of the wife. If the satisfaction of the wife, or her husband, differs by her educational attainment, it is plausible that these differences in marital satisfaction contribute to understanding the differences in marital dissolution. However, it is clear that marital satisfaction trajectories were practically identical by education. Marital satisfaction declines equally with duration of the marriage in all educational groups. In results not presented here, we ran additional growth curve regressions of marital satisfaction trajectories, and failed to find any educational differences in them (available upon request). This already suggests that marital satisfaction does not explain the educational gradients of divorce.

A more formal test of whether marital satisfaction explains the negative educational gradient in divorce (now using years of education) is provided by discrete-time event history models. Table 2 shows how female education is significantly and negatively related to divorce risk. When marital satisfaction is included into the analysis in a stepwise manner the coefficients for education remain stable. This confirms what was already suggested by Figures 3 and 4, that the negative educational gradient in divorce cannot be explained by differences in marital satisfaction. The assumption that the marriages of the lower educated are worse in terms of their quality, therefore does not seem to hold. This, then, points to barriers and alternatives as possible reasons for the gradient.

*Table 2. Discrete-time Event History Models Explaining Divorce (odds ratios)*

|                                | Model 1  |      | Model 2  |      | Model 3  |      |
|--------------------------------|----------|------|----------|------|----------|------|
|                                | OR       | SE   | OR       | SE   | OR       | SE   |
| Wife's education in years      | 0.838*** | 0.04 | 0.853*** | 0.05 | 0.855*** | 0.05 |
| Duration: 5-10 years           | 0.690    | 0.27 | 0.449**  | 0.18 | 0.417**  | 0.17 |
| Duration: 10-15 years          | 0.793    | 0.31 | 0.613    | 0.25 | 0.552    | 0.22 |
| Calendar year                  | 0.965    | 0.02 | 0.967    | 0.02 | 0.959    | 0.02 |
| Duration 5-10 * education      | 1.128    | 0.09 | 1.166*   | 0.09 | 1.169*   | 0.10 |
| Duration 10-15 * education     | 1.022    | 0.09 | 0.997    | 0.09 | 1.008    | 0.09 |
| Wife's marital satisfaction    |          |      | 0.549*** | 0.03 | 0.608*** | 0.03 |
| Husband's marital satisfaction |          |      |          |      | 0.746*** | 0.05 |
| N                              | 7 679    |      |          |      |          |      |

Note. Controls included but not shown for region \* p < 0.10; \*\* p < 0.05; \*\*\* p < 0.01



### *Discrete-time event history models*

We continue looking for explanations of the female educational gradient of divorce in Table 3, which presents results from a series of discrete-time event history models. Model 1 is the “baseline” model with now also the possible mediating variables included that were found to be significantly related to divorce risk and education. Model 2 removes the variables that were not significant in Model 1, and Model 3 adds the marital satisfaction variables.

The aim of this part of the analysis is to show to what extent the effect of education is mediated by other variables. The exact order of the causal chain, whether education caused variation in the mediating variables or the other way around, is beyond the scope of this paper. The numbers show that several variables related to the experience of hardship increased divorce risk: his unemployment, the experience of material deprivation, and his alcohol problems. Several variables that could reflect moral or financial barriers to divorce were related to higher divorce risk too: when the wife’s parents divorced before her 16<sup>th</sup>, she was not religious, and the couple did not own a house they were more likely to leave each other. The other variables shown in Table 3 were all significantly related to divorce risk, but ceased to be significant when putting all variables together into one model. One of these variables was the only indicator of the available alternatives we could include: the share of single men in a woman’s age-group and region.

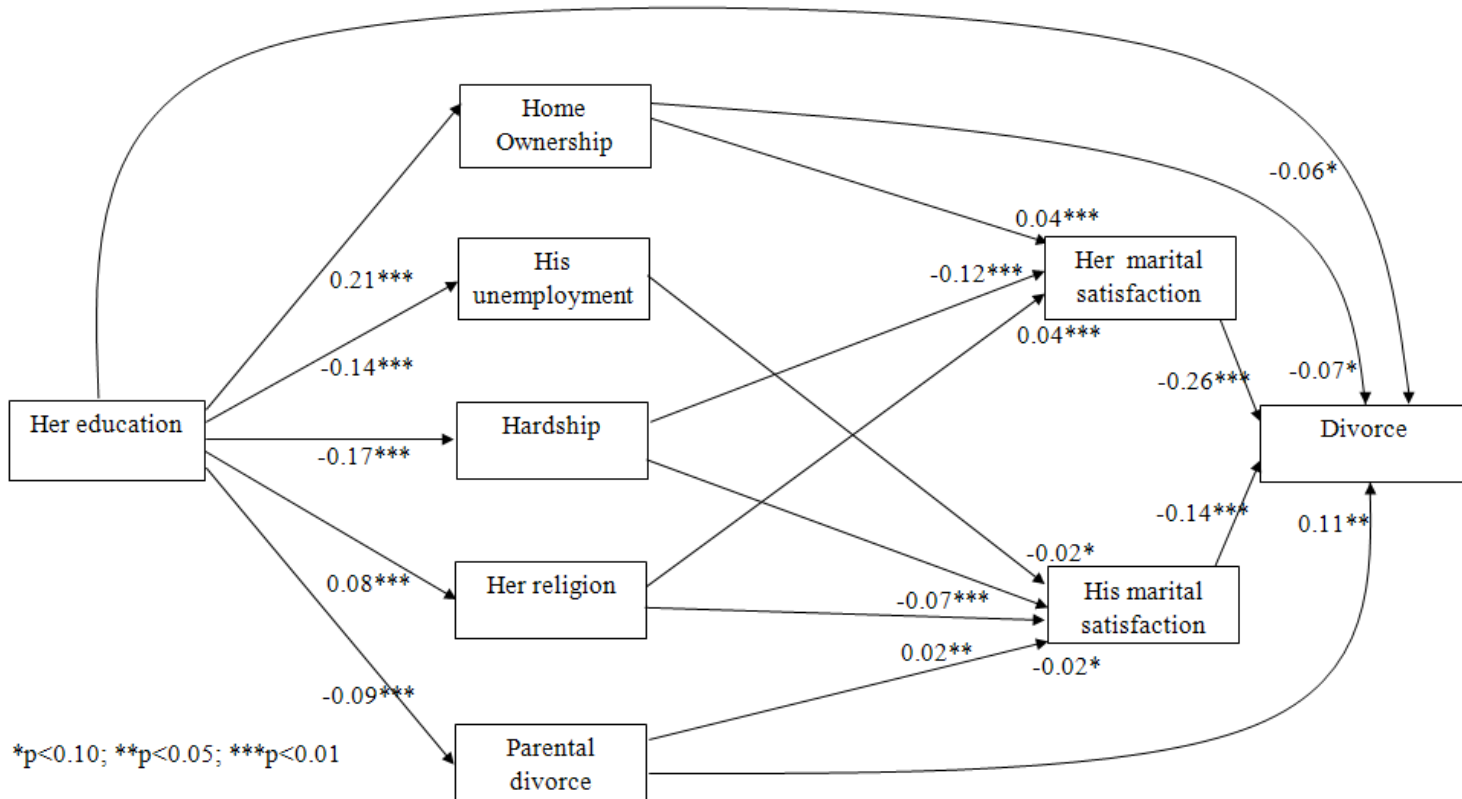
Table 3. Discrete-time event history models explaining divorce N = 7 679 couple-years (1 587 couples)

|                                  | Model 1 |      | Model 2 |      | Model 3 |      |                                  |  |
|----------------------------------|---------|------|---------|------|---------|------|----------------------------------|--|
|                                  | OR      | SE   | OR      | SE   | OR      | SE   |                                  |  |
| Wife's education                 | 0.94    | 0.06 | 0.91*   | 0.05 | 0.90*   | 0.05 |                                  |  |
| Duration 5-10                    | 0.23    | 0.26 | 0.83    | 0.32 | 0.50*   | 0.21 |                                  |  |
| Duration 10-15                   | 0.64    | 0.71 | 1.03    | 0.41 | 0.68    | 0.28 | *p<0.10; **p<0.05; ***p<0.01;    |  |
| Duration 5-10* her edu           | 1.07    | 0.09 | 1.12    | 0.09 | 1.16*   | 0.10 | Note: controls not shown:        |  |
| Duration 10-15 * her edu         | 1.00    | 0.09 | 1.01    | 0.09 | 1.01    | 0.09 | calendar year, region. Variables |  |
| Number of children               | 0.99    | 0.09 |         |      |         |      | not included in models due to    |  |
| Child before marriage            | 1.17    | 0.26 |         |      |         |      | insignificance: having a child   |  |
| Her parental divorce             | 1.51**  | 0.30 | 1.53**  | 0.30 | 1.53**  | 0.30 | under 4 years old; pre-marital   |  |
| Husband's education              | 0.92    | 0.05 |         |      |         |      | cohabitation; age at marriage;   |  |
| His educ * duration              | 1.12    | 0.10 |         |      |         |      | her savings; her share of labor  |  |
| His educ * duration <sup>2</sup> | 1.04    | 0.09 |         |      |         |      | income; her unemployment; her    |  |
| He unemployed                    | 1.79*   | 0.61 | 1.82*   | 0.61 | 1.53    | 0.54 | unusual work hours; whether the  |  |
| His savings                      | 0.997   | 0.00 |         |      |         |      | house is jointly owned; and the  |  |
| Ln(household income)             | 0.97    | 0.16 |         |      |         |      | share of single men in her age   |  |
| Deprivation index                | 2.86**  | 1.37 | 3.10**  | 1.45 | 1.45    | 0.71 | group and region.                |  |
| Home ownership                   | 0.64**  | 0.14 | 0.59**  | 0.12 | 0.67*   | 0.14 |                                  |  |
| She religious                    | 0.54*   | 0.19 | 0.50*   | 0.19 | 0.61    | 0.23 |                                  |  |
| His alcohol problem              | 2.98*   | 1.95 | 2.95*   | 1.94 | 1.39    | 0.97 |                                  |  |
| Her marital satisfaction         |         |      |         |      | 0.63*** | 0.04 |                                  |  |
| His marital satisfaction         |         |      |         |      | 0.76*** | 0.05 |                                  |  |
| N                                |         |      |         |      |         |      | 7 679                            |  |

Another observation that can be made from Model 2 is that the coefficient for wife's education became considerably smaller and ceased to be significant compared to the baseline model of Table 2. At the same time, the coefficients for the interactions of time with education were not altered by the inclusion of these variables. This suggests that the 6 intervening variables of Model 2 explain the majority of the general negative effect of education on divorce risk, but the change over time cannot be explained (but is also not significant). When including marital satisfaction into Model 3 the effects for deprivation and his alcohol problems were dramatically reduced, suggesting that these effects on divorce were mediated by marital satisfaction. This was to a lesser extent the case for his unemployment and her religion too, these effects lost significance but the coefficients did not change that much. To get a better view of how each of these variables were related to education, marital satisfaction and divorce, they were included in a path model estimated with a Structural Equations Model.

In Figure 5 the results are displayed. In this case, the interactions of education with time were left out to give a cleaner presentation and because the mediating variables only explained the overall educational gradient and not its change over time in the previous analyses. The path model confirms the results of Table 3. The effects of unemployment, deprivation and religion only significantly affect divorce through marital satisfaction. At the same time, the majority of the effects of home ownership and parental divorce were direct and not mediated. It can be noted that there still remains a part of the direct negative effect of education on divorce to be

Figure 5. Structural Equations Model explaining divorce, standardized coefficients, N = 7 679



explained by variables not included in these models. That some effects of variables related to education were mediated by marital satisfaction suggests that some effects of education on divorce do go through marital satisfaction. However, overall, education is not related to higher satisfaction. This suggests that other processes at play that could not be observed cancelled out the positive effects of education on marital satisfaction that are caused by reductions in the experience of hardship (i.e. unemployment, alcohol problems and deprivation; alcohol problems are not shown in the figure of path model but behaved like hardship), or that the overall effect of the reduction in hardship is not large enough to significantly alter marital satisfaction overall.

## Discussion

Half a decade after making his prediction of a reverse in the class gradient of divorce from a positive to a negative one, several studies have found support for William Goode's (1962; 1963) hypothesis about the trends in the association between female education and divorce. Despite some support for the role of decreasing social barriers to divorce in explaining this finding (Härkönen and Dronkers 2006), the underlying reasons for these trends remain poorly understood (Amato 2010).

In this study, we have sought to improve understanding of why married women with lower educational attainment are more likely to divorce today, focusing on the United Kingdom, which

currently has a negative female educational gradient of divorce. In line with previous studies, we found a negative female educational gradient of divorce, which additionally was the largest at early marital durations. Commonly used theoretical starting points lead to expect that female education has a positive effect on marital dissolution, which led us to look elsewhere for cues to explain the observed patterns. We built on social exchange theory, which posits that the decision to divorce is based on the costs and rewards to a particular marriage, the barriers to leaving that marriage, and on alternatives outside the marriage. We expected that, to the extent that women with different levels of education differ in the “quality” of their marriages, and thus the balance of costs and rewards to their marriages, this should show in educational differences in marital satisfaction. However, this turned out not to be the case, as marital satisfaction declined equally at all educational levels. This, instead, points to barriers and alternatives.

In our empirical analysis, we found that the most important factors mediating the female negative educational gradient of divorce were home ownership and parental divorce. Effects were also found for economic variables such as the husband’s unemployment status, his alcohol related problems or the experience of deprivation by the household. However, these effects were mediated through marital satisfaction. Given that marital satisfaction does, overall, not contribute to a more negative educational gradient in divorce, this suggests that other effects override these effects of resources and that the direct effect of education on divorce is more important when explaining the

gradient. The hypothesis posited by Goode in the 1960s that, ultimately, the lower educated will be the ones who divorce most once barriers are lowered due to more financial strain, does not hold. While the financial strain the lower educated experience indeed affected divorce risk, and did so through marital satisfaction, they were cancelled out by other effects going through marital satisfaction. In addition, what seems to really explain educational differences in divorce risk are the direct effects that are not mediated by marital satisfaction. These results thus question the importance of economic resources as alleviating marital strain when explaining educational differences in divorce risk. Instead, the results point at the importance of barriers. The direct effects of education on divorce were to the largest extent mediated by two variables, home ownership and parental divorce. The first points at the role of joint investments by the couple. Lower educated couples might have fewer obstacles to divorce because they invested less into the relationship financially. The effect of parental divorce has been given various explanations in previous research, but many results point to the role of socialization (Dronkers & Härkönen, 2008). People whose parents split up during childhood have learned at a young age that divorce is a possible pathway for a relationship, and seem to value marital happiness relatively more than marital stability compared to others. In that case, they will more easily opt for leaving a relationship in order to look for more marital happiness, reducing the moral barriers to divorce. That parental divorce explains a part of the direct effect of education on divorce thus points at the possible role of moral barriers.

Overall, it seems that the negative female educational gradient of divorce reflects more barriers—and possibly (lack of better) alternatives—rather than educational differences in marital quality and satisfaction. This interpretation differs from the (often implicit) ones which stress the role of economic stressors and their effect on marital interactions and behaviors. In the final models there still remained a part of the educational gradient unexplained. When including other covariates that were not significant predictors of divorce in previous models, the educational gap was smaller. Many variables contributed to this reduction. Education is related to so many variables and can be a proxy for so many characteristics and processes that a small set of variables is unlikely to be able to explain entire effects of education. We managed to show that financial and moral barriers play a role, but cannot exclude all other explanations. It is especially in this kind of situation that being able to discard one group of explanations is a step forward in research. In this case explanations related to marital satisfaction seem not to be valid. To confirm this, further research could look at whether these results can be found in different settings too. This study also only used one indicator of marital satisfaction. It would be interesting to see whether results are the same when looking at indicators of conflict or other interactions within the couple.

Given the limited observation window of our data, we are unable to give direct answers as to the reversal of the educational gradient over time (cf. Chan and Halpin 2005). However, our findings can point to some possible explanations, which can be



tested in future research. Here, it should again be stressed that we did not find educational differences in marital satisfaction nor its trajectories over the marital life course. Economic and other strain, which should be increasingly associated with low education and predict marital satisfaction, is thus unlikely to provide an explanation to the historical changes. This also suggests that William Goode's argument, which stressed how the decreasing social, legal and economic barriers to divorce permit these strains an expression in divorce, needs to be re-evaluated. Instead, our findings point to the individual and couple-level barriers to divorce. Higher educated women seem to have a higher threshold to divorce, given marital satisfaction. Has the educationally differentiated role of these barriers changed?

In general, two possible families of explanation can be put forward. First, the distribution of the intervening (or control) variables across educational attainment can have changed, while their effects remained the same. Second, their effects can have changed. In the latter case, this would come about through changing rewards and costs (in terms of marital stability) of these factors, in a changing social environment.

Regarding the first family of explanations, our results pointed primarily to two factors: parental divorce and home ownership. Could the correlation of education with these factors have changed over time? Regarding the effects of parental divorce, it could be that being lower educated is increasingly related to having divorced parents. This could be through a direct effect of

divorce on educational attainment, or because the parents of the lower educated started divorcing more than others. Given the intergenerational transmission of educational attainment, it could be argued that an initial reverse in the educational gradient of divorce will be amplified by the effects of parental divorce. However, this still does not explain why the gradient reversed in the first place. If we look at the effect of parental divorce as indicating a role for moral barriers more in general, we do know that the higher educated are today less approving of divorce compared to the lower educated (Rijken & Liefbroer, 2012), and that this was probably the other way around in the past (Levinger, 1976). A reversal in the distribution of moral barriers could therefore underlie the changes in the educational gradient of divorce observed for women.

Home ownership has been rising steadily over the last decades in Britain, and it is still those with fewer resources that are more likely to rent than others (Ermisch & Halpin, 2004). With the share of people owning a home steadily increasing, renting a house will increasingly single out the most disadvantaged which could have led to an increased correlation between education and home ownership. More in general increasing income inequality could have led to a tighter relationship between education and economic resources. Qualitative studies from the United States have pointed at how lower educated women shun marriage because of the instable economic situation that the (lower educated) men in their marriage market are in (Edin & Kafalas, 2005). This suggests that the partners of lower educated women might have less to offer today than some decades ago when they had stable employment and

income. This could have reduced the economic barriers for women to leave.

Can the effects of these factors have changed over time, that is, do parental divorce, home ownership or other factors stabilize marriages more today than they did earlier? Theories of family change commonly point to the shifting foundations of marriage, in which its role as an institution—in which individuals expect to remain for its own sake—is diminished. At the same time, more emphasis is placed on personal gratification and fulfillment. Individuals are more allowed—and even expected—to seek these from other relationships were their current ones not to provide them (Cherlin 1992; Coontz 2005; Amato et al. 2007). In concordance with the stances, the subjective reasons given to divorce have changed (De Graaf and Kalmijn 2006b). Overall, this would suggest that marital satisfaction should play a more prominent role as a predictor of divorce, and correspondingly be able to explain differences by education and other variables. While the importance of marital satisfaction may indeed have increased, this prediction does not take into account the importance of—other than socially sanctioned—barriers to divorce. The presumably rising importance of marital satisfaction and marital quality may indeed have led those with few common investments (such as housing) or less moral obstacles to increasingly dissolve their less-than-perfectly satisfying marriages. Those with more to lose, or for whom the divorce process would introduce unwanted hurdles, may then be more likely to remain in such marriages. Correspondingly, education, which once provided women with resources to leave unsatisfying

relationships and create independent households (Becker 1981) can now have become a correlate of investments and resources which increase the costs of divorce. Where marital satisfaction might be an important predictor of divorce in general, group differences, such as the negative educational gradient of divorce, might be more related to variation in barriers. While this argument is similar to that by Härkönen and Dronkers (2006: 514), it stresses the barriers to divorce associated with education instead of the possible skills and resources that make relationships work and last.





Another version of this paper has been published in the

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## Chapter 2: Jackpot? Gender Differences in the Effects of Lottery Wins on Separation

### Abstract

*In this study, information on small to modest lottery wins from the British Household Panel Survey (N = 2,563) was used to investigate the effect of income on separation. The analysis demonstrated that money matters within relationships. Lottery wins temporarily reduced the odds of separation after men won. Men spent more on leisure and became more satisfied with their leisure time and social lives after winning. Nevertheless, most of the effect of lottery wins on union stability was not mediated by changes in satisfaction; instead, a direct effect of wins on the threshold to leave relationships was observed. No effect on union stability was found when women won. Women did not spend their winnings on leisure time but instead saved or spent money on durable items. These types of spending did not increase satisfaction. The findings suggested that, within families, men acted relatively independent, whereas the behavior of women was more family oriented.*

Does money matter within relationships? Studies focusing on family stress have argued that, yes, money matters. Economic hardship causes negative marital interaction and reduces marital happiness (Conger et al., 1990). Other studies, focusing on the role of gender, have advocated an opposite effect of money brought in by women: Income earned by women could reduce the stability of couples by reducing dependency or by contradicting existing gender norms (Becker, 1981; Brines 1994). The former finding has been supported by extensive empirical material (Amato, Booth, Johnson, & Rogers, 2007; Conger et al., 1990; Poortman, 2005), whereas results have been mixed for the latter (Amato, 2010; Amato & James, 2010; Lyngstad & Jalovaara, 2010; Oppenheimer, 1997; Rogers, 2004; Sayer & Bianchi, 2000; Schoen, Rogers, & Amato, 2006). At the same time, empirical material from both strands of literature have had difficulties disentangling the effects of income from those of events (e.g., unemployment) or inherent characteristics of people that also influence relationships. In this study, I used information on modest winnings from the lottery and other games of chance to estimate the effect of temporary income increases on separation. In addition to addressing endogeneity issues, I investigated in detail the mechanisms connecting income to separation. The data from the British Household Panel Survey (BHPS; see <https://www.iser.essex.ac.uk/bhps>) used in this research allowed an examination of the influence of satisfaction with various domains of life and of certain types of consumption on union stability. This refinement allowed me to empirically distinguish

among competing hypotheses about the determinants of couple behavior that are derived from different theoretical perspectives.

The research question of this paper was *What is the effect of modest temporary positive income changes on separation, and how might the observed patterns be explained?* Given earlier findings about distinct effects for men and women, differences by gender were a main focus of the article too: *Do gender differences in the effect of income on the probability of separation exist and, if so, why?*

I hypothesized that income reduces the odds of separation through reduced economic stress for both men and women. At the same time, income brought in by women is in general expected to reduce dependency. In addition, it could negatively affect the satisfaction of men because expectations about gender roles are contradicted.

### Income and union dissolution

In this section, I discuss expectations about the effects of income on union stability. Most of the literature on this topic has focused on the effects of income on marital quality or satisfaction. Nevertheless, a sole focus on marital quality might be too limited when investigating the effects of income on union dissolution. Recent research has emphasized that, in addition to relationships of below-average quality, many relationships with average marital quality also dissolve. Researchers have suggested that couples with an average-quality marriage have a lower commitment to the relationship (Amato & Hohmann-Marriott, 2007). When looking at

separation risks from this perspective, sources of distinct risks of separation can be categorized into factors that reduce marital satisfaction and factors that lower the threshold to leave relationships. People with low commitment to their current relationships require a smaller decline in marital satisfaction to separate. An examination of how income could affect the threshold at which people are willing to leave a relationship might help explain the dissolution of relatively untroubled couples. In this section I therefore separately discuss effects of income that are mediated by changes in marital quality and effects of income on exit thresholds (i.e., the levels of marital quality at which relationships dissolve). The perspectives presented apply to income in general, but in this research I tested only the effects of relatively modest temporary income changes on marital separation.

### *Income and Marital Quality*

In general, one would expect income to make the lives of people easier and therewith to stabilize relationships. In line with this expectation, several studies have empirically confirmed predictions from the *family stress model* (Amato et al., 2007; Conger et al., 1990; Poortman, 2005). This model, proposed by Conger et al. (1990), posits that economic stress negatively affects marital interaction and marital happiness.

Whereas a firm body of research supports findings based on the family stress model, researchers have had difficulties separating

effects of income from other effects. Having a higher income could be associated with many inherent characteristics that make people more able to manage relationships. Furthermore, changes in income often occur at the same time as other events, such as unemployment. Research that has explicitly paid attention to possible differing effects of employment and income, although not overcoming endogeneity problems, has shown that the effects of employment and income on union stability can be distinct from each other (Teachman, 2010). The effect of income, when isolated from other events and selection biases, however, remains unclear.

A second theoretical perspective proposes that couple behavior is determined by expectations about gender roles. In several dimensions of family life, scholars have found what are called manifestations of *doing gender*. It has been argued that men and women behave in a certain manner to confirm their gender identities (Bittman, England, Sayer, Folbre, & Matheson, 2003; Brines, 1994; Härkönen, 2007; Ono & Raymo, 2006). If, for some reason, the gender identity of a person is threatened, compensation is sought in order to restore the gender roles within the relationship. The classic example is that men who are not contributing to household income, but have a partner who does, reduce their share of domestic work. It has been suggested that they do so to restore the gender roles within the couple (Brines, 1994). If considerations about gender roles affect the behavior of couples, one would expect that, in general, positive income changes experienced by men would stabilize relationships through increased marital satisfaction. At the same time, women's increased income would be destabilizing. Conger et

al. (1990) found that men's marital interaction became more negative when their breadwinner identity was threatened, which led to lower marital satisfaction.

A third theoretical perspective used in the context of couple behavior is the *bargaining* one (Lundberg & Pollak, 1996; Manser & Brown, 1980; McElroy & Horney, 1981). Its basic argument is that dependent partners in a couple have less bargaining power and, consequently, less influence on the behavior of the couple. Increased bargaining power can increase a person's marital satisfaction by aligning the couple's behavior with one's personal preferences. On the basis of this perspective, one could expect that increases in income will cause improvements in marital satisfaction for the receptors yet have a negative effect on the marital satisfaction of their partners.

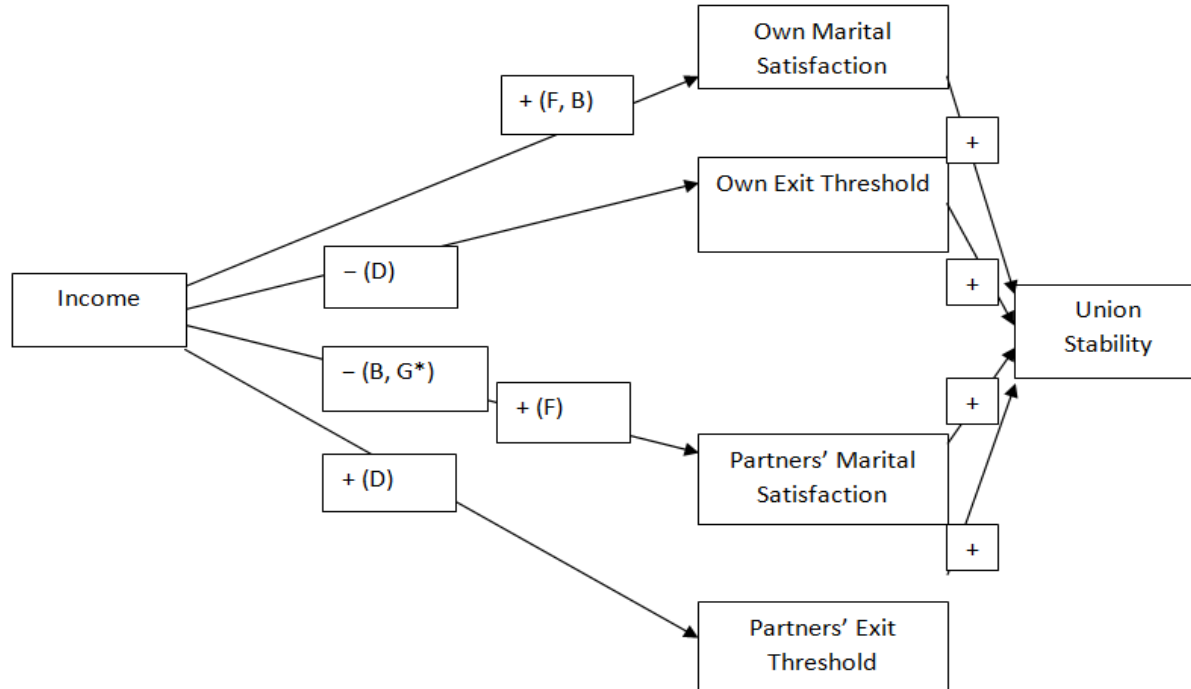
### *Income and Exit Thresholds*

Becker (1981) presented a theoretical perspective that provided predictions about exit thresholds by focusing on dependency within relationships. In traditional households, men specialized entirely on paid work, and women took care of domestic unpaid work with the aim of maximizing the overall utility of the couple. In such households both partners became, to a certain extent, dependent on each other. Based on a supposed stabilizing effect of dependency, less specialization should lead to less stable relationships (Becker, 1981). One could interpret this dependency perspective in two

ways: Either (a) people wait to become financially independent to the extent that poverty can be prevented before leaving their partner, or (b) people leave only when their financial independence ensures a standard of living similar to the one they enjoyed within the relationship. In both cases, from this perspective income received by the dependent partner within a couple lowers his or her threshold to leave a relationship. If a relative understanding of dependence is assumed, income received by a person increases the exit threshold of their partner to leave the relationship too.

Most empirical studies have looked at changes in female employment or earnings to investigate the effects of women's resources on the stability of relationships. In general, the results are mixed, depending on the country studied, the time period taken into account, and whether the research examined earnings or employment only (Amato, 2010; Lyngstad & Jalovaara, 2010; Oppenheimer, 1997; Rogers, 2004; Sayer & Bianchi, 2000; Schoen et al., 2006). The story of economic independence enabling divorce was found more often in older studies and more often in Europe than in the United States (Amato & James, 2010). Results also differed by the type of couples investigated. Empirical studies in both Europe and the United States found that, within more egalitarian couples, earning differences destabilized relationships, whereas they stabilized more traditional relationships (Brines & Joyner, 1999; Kalmijn, Loeve, & Manting, 2007). Cooke (2006) found that the effects of the division of labor on stability differed by country and institutional support of egalitarian behavior.

Figure 1. Hypothesized mechanisms connecting income with union stability



Note: F = family stress model; B = bargaining perspective; D = dependency perspective; G = gender roles (applicable only to income received by women).



## *Hypotheses*

Figure 1 shows the hypothesized links between income and union stability that result from the different perspectives outlined before. The different hypotheses are not necessarily mutually exclusive. This makes empirical identification of the processes at play harder. In my empirical analysis I therefore looked not only at marital quality but also at other mediating variables (e.g., satisfaction with other domains of life and consumption measures). In addition, I investigated whether effects are especially pronounced for certain types of couples. I use the term *marital satisfaction* instead of *marital quality* because a distinction is made between the satisfaction levels of both partners. The hypotheses of this study are as follows.

Hypothesis 1: *Income stabilizes couples by reducing economic stress and improving marital interaction and satisfaction of both partners.*

If this hypothesis derived from the family stress model holds true, one would expect the effects of income on union stability to be mediated by changes in consumption, financial difficulties, and marital satisfaction. In addition, one can expect that effects are more pronounced for low-income couples.

Hypothesis 2: *Income received by women lowers marital satisfaction of their partners, which destabilizes relationships.*

If couples act in order to confirm gender roles, one would expect the negative effects on couple stability to be mediated by changes in

marital satisfaction. I expected that the hypothesized effects are bigger for men who have a traditional outlook on gender roles.

*Hypothesis 3: Income increases the marital satisfaction of the person who receives it but decreases the marital satisfaction of the partner.*

If the bargaining hypothesis is correct, one would expect the effect of income on marital satisfaction to be mediated by changes in the categories of consumption that especially increase satisfaction with other domains of life (e.g., leisure time and social life) for the receptor of income.

*Hypothesis 4: Income reduces the exit threshold to leave a relationship for the person who receives the income, whereas it increases the exit threshold of the partner.*

If dependency plays a role in union stability, then income received by the dependent part of the couple should destabilize the relationship, whereas income received by the independent part should stabilize it. If an absolute take on dependency is valid, one would especially expect this to be the case for couples with lower income.

Unexpected income changes, such as lottery wins, can have different effects compared to income that is anticipated. Therefore, an absence of effects found in the present study would not imply that the corresponding theoretical perspectives do not matter for the relationship between income and union stability in general. Nevertheless, the presence of effects would show that the

corresponding theoretical perspectives are (partly) determining couple behavior. In addition, some of the perspectives outlined before might be of less relevance for modest temporary income changes compared to permanent income changes. This could be the case for the dependency and bargaining perspectives. Nevertheless, temporary income changes can temporarily increase a person's dependency on a partner who has an increased income, or they can improve a person's bargaining position for some time.

## Method

My empirical analysis focused on positive changes in income. I used information provided by the BHPS on small to modest income gained by playing the lottery and other games of chance. These data have been used previously to estimate the effects of income on health (Apouey & Clark, 2009; Gardner & Oswald, 2007). The BHPS is a representative longitudinal household survey of the British population, which annually interviewed all individual members of a sample of British households. The first wave dates from 1991; however, the first year in which lottery wins were recorded was 1997. Whether partnered people remained in their relationships 3 years after winning in the lottery was the main dependent variable of the analysis.

## *Sample*

In principle, lottery wins are random, but not everybody plays the lottery. Comparing lottery winners with the rest of the population would therefore also reflect differences between people who played lottery and people who did not. In the BHPS, no information was available on whether people actually played the lottery, just the amount of money people won. Therefore, in this study I looked only at lottery winners. The main independent variable was the amount of money won by playing the lottery and other games of chance. Put differently, I compared people who won insignificant amounts of money with people who won considerable prizes. As a consequence, the results were not biased by differences between nonwinners and winners, but they also were representative of only the lottery-winning population. Britain was chosen as the country of study to prevent the results from generalizing only to a highly selective part of the population. In Britain, 71% of men and 65% of women participated in any kind of lottery or gambling activity in 2007. The majority of these people participated only in the National Lottery. A minority also participated in other activities, of which buying scratch cards and betting on horse races were the most popular (Wardle et al., 2007). As shown in Table A1 in the appendix, in the period covered by this study the majority of all men in the BHPS won money in the lottery, and almost half of women did so. The winners used in this study were therefore not a highly selective part of the population who played the lottery, or even of the British population in general. Nevertheless, as shown in Table A1, lottery winners did differ from nonplayers on some

important socioeconomic variables. I conducted additional analyses to check whether the results changed when nonwinners were included. These analyses, presented in the results section, pointed out that nonwinners do not differ in divorce risk from small winners.

In the period 1997 through 2005, the BHPS recorded 3,043 individuals who won a certain amount of money in the lottery or other games of chance and had a partner in the year before the win. Wins were recorded on the basis of one question asked to each person of the household individually: “Since September 1st [year] have you personally received any payments, or payments in kind, from anything listed on this card?” This was followed up by a question regarding the amount won if people indicated they had received payments in the category “a win on the football pools, National Lottery or other form of gambling.” Because this question was asked every year, multiple lottery wins per person could have been recorded. In order to have each individual appear only once in the sample, only the biggest winning of the period covered was taken into account. Controls were included for the number of waves in which lottery information was available for individuals.

Wins were divided into male and female categories on the basis of who reported the win. Of all lottery winners, 47.7% were women, and 52.3% were men. It is possible that couples participated jointly in the lottery. In 7.4% of the cases, both members of the couple reported the same amount of money won in the lottery. In some cases, people would have won the same amount of money

coincidentally (especially with smaller wins; wins reported by both partners were, on average, lower than wins reported by only one partner); in other cases they may actually have played together. This information, however, could not be extracted from the data. To make sure results were not be biased by people who played jointly, robustness checks were performed by including controls for whether both partners reported the win and by excluding these cases from the analysis.

### *Measures*

As mentioned, the main independent variable of the analysis was the logged amount of money won in the lottery or other games of chance. The smallest amount won was £1 ( ~\$1.57 USD)<sup>1</sup> and the biggest win was £208,986 (~\$327,395 USD; all wins and income variables were adjusted to 2005 prices). The average win was £402 (SD = £5,112 ~\$630 and \$8,008 USD, respectively), whereas the median win was only £50 (~\$78 USD). The distribution of wins is displayed graphically in Figure A1 in the appendix. The distribution of lottery wins was similar for men and women, even though the average logged win was larger for men than for women (the average win was 4.15 for men, ~£63 [~\$99 USD] and 3.95 for women, ~£51 [~\$80 USD]; the standard deviation was 0.04 larger for men than for women, ~15 pence [~23 cents in U.S. currency]).

The dependent variable of interest was a dummy variable indicating whether the lottery winner was still living with his or her partner 3

years after the win. I chose a time frame of 3 years on the basis of a trade-off between the number of separations observed, which increased over time, and the effect of lottery wins, which was expected to decrease over time. After 3 years, 4.6% of the sample had separated, and relevant controls (e.g., age) had expected and robust effects. The effects of lottery wins during different years after the win have also been estimated in the analysis.

To test the hypotheses, I included several mediating variables in the analysis. Satisfaction with various domains of life was measured on a scale ranging from 1 (*not satisfied at all*) to 7 (*completely satisfied*). Expenditures on leisure and on eating out were measured in pounds per month usually spent. Interest received on savings referred to the amount received in the preceding year.

The items just mentioned were asked of both partners individually, whereas other items were answered on behalf of the household as a whole. An index of the number of household durables bought in the last year (picked from a list of nine items, e.g., TV, washing machine, computer), and whether the household experienced material hardship (an index of eight forms of hardship, e.g., whether the respondent was able to eat meat on alternate days, replace furniture) were the household-level variables used for the analysis.

Several variables were included as controls in all analyses unless stated otherwise. Some of these variables were used as moderating variables in additional analyses. The 11 control variables used were (a) age, (b) age squared, (c) age difference between partners, (d) labor and nonlabor income in the year of reference, (e) the share of

labor income brought in by the reference person, (f) education level of both partners, (g) activity status, (h) number of children, (i) a dummy for whether the couple was cohabiting or married, and measures of (j) gender norms and (k) personality. Level of education was measured by three dummies reflecting lower International Standard Classification of Education (ISCED) categories 1 and 2, middle categories (ISCED 3 – 4), and higher categories (ISCED 5 – 6). Three dummies were included for whether the person was a student, retired, or unemployed in the year of reference. Gender norms were measured by a standardized scale based on eight questions about the respondents' views on gender roles and other issues related to family life ( $\alpha = .68$ ). Personality was measured by standardized scales based on three questions for each of the following five traits: (a) Conscientiousness, (b) Extraversion, (c) Agreeableness, (d) Neuroticism, and (e) Openness to Experience ( $\alpha$ s ranged from .51 to .68).

See Table 1 for descriptive statistics of the variables and the sample used. For the sample of lottery winners, 84% of the respondents provided all information needed for the controls and were still participating in the survey 3 years after winning. This reduced the final sample to 2,563 individuals. Except for gender norms and personality traits, all controls were measured in the year before the lottery win. Gender norms were measured only biannually; therefore, they were either measured at  $t - 1$  or  $t - 2$ . Personality traits were measured only once throughout the whole survey (in 2005) and were in several cases thus measured after the lottery win occurred. Even though personalities change over the life course,



they would have been unlikely to change in the relatively short time frame of this study. One usual control, the duration of the relationship, could not be included in the analysis. A reliable measure could be obtained for only a selective part of the sample. Including the length of the relationship in the analysis was one of the robustness checks that were performed.

*Table 1. Descriptive Statistics for the Sample of Lottery Winners (N = 2,563)*

| Characteristic                               | Mean  | SD   | Min | Max   |
|--|-------|------|-----|-------|
| % Separated at $t + 3$                       | 4.6%  |      |     |       |
| % ISCED 3 – 4                                | 41.6% |      |     |       |
| % ISCED 5 – 6                                | 40.4% |      |     |       |
| % Unemployed                                 | 1.4%  |      |     |       |
| % Retired                                    | 13.4% |      |     |       |
| % Cohabiting                                 | 20.0% |      |     |       |
| % Win >£400 (~\$623 USD)                     | 11.1% |      |     |       |
| Ln(lottery win)                              | 4.05  | 1.49 | 0   | 11.92 |
| Ln(labor income)                             | 7.21  | 4.08 | 0   | 11.99 |
| Ln(nonlabor income)                          | 5.34  | 3.34 | 0   | 11.31 |
| Age  | 45.0  | 13.0 | 17  | 86    |
| Reference person age – partner’s age         | -0.04 | 5.70 | -32 | 32    |
| No. children in household                    | 0.65  | 0.97 | 0   | 5     |
| Satisfaction                                 |       |      |     |       |
| With income                                  | 4.69  | 1.45 | 1   | 7     |
| With partner/spouse                          | 6.30  | 1.15 | 1   | 7     |
| With social life                             | 5.05  | 1.38 | 1   | 7     |
| With amount of leisure                       | 4.73  | 1.60 | 1   | 7     |
| With use of leisure                          | 4.95  | 1.45 | 1   | 7     |
| Individual monthly expenditure               |       |      |     |       |
| On leisure                                   | 38.7  | 41.1 | 0   | 169   |
| On eating out                                | 42.1  | 40.3 | 0   | 169   |
| Household spending on durables (index)       | 0.04  | 0.25 | 0   | 0.77  |
| Ln(Interest received over savings last year) | 2.78  | 2.77 | 0   | 9.21  |
| Material hardship (index)                    | .10   | .15  | 0   | 1     |

*Note:* Characteristics refer to  $t - 1$ , where  $t = 0$  is the year of the lottery win. Min. = minimum; Max. = maximum; ISCED = International Standard Classification of Education.

In principle, the randomness of lottery wins should make the use of controls less important. At the same time, persons who played more games of chance might have been more likely to have won more money. The BHPS provided no information on how often people played. Following Apouey and Clark's (2009) approach, I examined the extent to which winning a big prize can be explained by individuals' relevant characteristics the year prior to winning. Results are shown in Table A2 in the appendix. When explaining the size of lottery wins, a model with just the necessary controls (year of the win and number of years with information) performed better, in terms of adjusted  $R^2$ , than a model with all variables included. This suggests that selection on this ample range of observables, which is to say all controls used in this study, was not significant. To confirm this result, controls were included stepwise into the empirical analysis. If the effects of lottery wins were robust to the inclusion of controls, this would reaffirm that lottery wins were not related to observables. At the same time, the extent to which significant selection on unobservables might have existed will remain unclear.

### *Procedure*

The analysis was divided into two parts. The first part was aimed at estimating the effect of positive income changes on staying with a partner 3 years later. For both men and women, three logistic regressions were run. One model included the logged amount of money won as the independent variable and included only the

necessary controls (the year of the win and the number of years for which information was available on lottery wins). I also ran a second model with all controls included, to check whether lottery wins were indeed not related to other observables, and a third model in which the people who did not win in the lottery were included. The independent variable of interest in the third model was a categorical variable that divided the sample into nonwinners, small winners, and bigger winners.

The second part of the analysis was aimed at identifying the mechanisms connecting income with union stability. Sets of Ordinary Least Squares (OLS) regressions were run for each mediating variable. These regressions allowed me to distinguish among the pathways displayed in Figure 1. Multiple imputation was used to deal with missing values of the mediating variables and the analysis was subsequently conducted using the 20 imputed data sets.

For all analyses in which differences between men and women were of interest, I conducted significance tests by pooling the cases and interacting gender with the relevant variable. In a final step of the analysis, I estimated a path model using structural equation modeling. It included all mediating variables that turned out to be significant in the second part of the analysis as endogenous variables. All the controls were included as exogenous variables in all parts of the model. The path model allowed me to connect the findings of the two parts of the analysis and to investigate the relative importance of the different mechanisms investigated.

## Results

The data in Table 2 indicate how the size of lottery wins affected the probability of staying together with a partner 3 years after the win. Model 1 contained the effect of lottery wins when only the necessary controls were included. Model 2 included all controls, and Model 3 also included nonwinners and nonplayers.

Table 2 indicates that when men won more money in the lottery they were more likely to have remained with their partner 3 years later. This observed effect was robust to the inclusion of different kinds of controls, reaffirming that the size of the wins was not related to observables. I checked the extent to which the results fluctuated depending on the sample used by restricting the sample to people age 25 through 60 years and by excluding one wave of winners, as well as by excluding cases in which both parts of the couple reported the same win. The significance of the results was robust to such changes in the sample. The same held true when controlling for the length of the relationship (with a resultant loss of 350 cases). Differing usages of weights, and using OLS regression instead of logistic regression, also did not change results.

Results from an OLS regression (not shown) indicated that a one-unit increase in  $\ln(\text{lotterywin})$  increased the probability of having remained with a partner 3 years later by 0.76 percentage points (the constant in the regression being a 94.7% chance of having stayed together). The results for women contrasted with the pattern observed for men. No effect was observed for the size of wins on the chance of being separated 3 years later. The coefficients of

Table 2. Odds Ratios (ORs) Taken From Logistic Regressions Explaining Still Being With Partner at  $t + 3$ , Men

| Variable                           | Men/Male Wins |      |         |      |         |      |
|------------------------------------|---------------|------|---------|------|---------|------|
|                                    | Model 1       |      | Model 2 |      | Model 3 |      |
|                                    | OR            | SE   | OR      | SE   | OR      | SE   |
| Ln(lottery win)                    | 1.25*         | 0.13 | 1.25*   | 0.13 |         |      |
| Win $\leq$ £400 (ref.: no win)     |               |      |         |      | 1.22    | 0.17 |
| Win $>$ £400 (ref.: no win)        |               |      |         |      | 3.40*   | 2.02 |
| Income at $t - 1$                  |               |      |         |      |         |      |
| Ln(labor income)                   |               |      | 0.89    | 0.09 | 1.01    | 0.03 |
| Ln(nonlabor income)                |               |      | 0.98    | 0.04 | 1.01    | 0.02 |
| Share of lab income                |               |      | 3.49    | 3.78 | 1.69    | 0.65 |
| Education (ref.: ISCED 1 – 2)      |               |      |         |      |         |      |
| ISCED 3 – 4                        |               |      | 1.68    | 0.90 | 0.95    | 0.27 |
| ISCED 5 – 6                        |               |      | 1.07    | 0.56 | 0.83    | 0.23 |
| Partner ISCED 3 – 4                |               |      | 1.70    | 0.92 | 1.40    | 0.34 |
| Partner ISCED 5 – 6                |               |      | 2.08    | 1.20 | 1.47    | 0.36 |
| Others at $t - 1$                  |               |      |         |      |         |      |
| Age                                |               |      | 0.86    | 0.10 | 0.94    | 0.05 |
| Age squared (effects all positive) |               |      | 1.00†   | 0.00 | 1.00*   | 0.00 |
| Age – partner’s age                |               |      | 0.91**  | 0.03 | 0.97†   | 0.02 |
| Cohabiting                         |               |      | 0.36**  | 0.12 | 0.54**  | 0.09 |
| No. children                       |               |      | 0.75    | 0.12 | 0.90    | 0.08 |
| Gender norms                       |               |      | 1.23    | 0.37 | 0.96    | 0.16 |
| <i>Personality Traits</i>          |               |      |         |      |         |      |
| Conscientiousness                  |               |      | 1.12    | 0.19 | 1.12    | 0.10 |
| Neuroticism                        |               |      | 0.81    | 0.13 | 0.86†   | 0.08 |
| Openness to Experience             |               |      | 0.94    | 0.17 | 0.95    | 0.08 |
| Extraversion                       |               |      | 0.94    | 0.16 | 0.94    | 0.08 |
| Agreeableness                      |               |      | 0.87    | 0.13 | 1.00    | 0.08 |
| Pseudo $R^2$                       | .032          |      | .146    |      | .080    |      |
| $N$                                | 1,343         |      | 1,343   |      | 2,298   |      |

Note: Controls not shown: year of the win, number of waves with information on lottery wins, activity status. ISCED = International Standard Classification of Education. † $p < .10$ . \* $p < .05$ . \*\* $p < .01$ .

Table 2. (Cont.) Odds Ratios (ORs) Taken From Logistic Regressions Explaining Still Being With Partner at  $t + 3$ , Women

| Variable                           | Women/Female Wins |      |         |      |         |      |
|------------------------------------|-------------------|------|---------|------|---------|------|
|                                    | Model 1           |      | Model 2 |      | Model 3 |      |
|                                    | OR                | SE   | OR      | SE   | OR      | SE   |
| Ln(lottery win)                    | 1.04              | 0.09 | 1.06    | 0.11 |         |      |
| Win $\leq$ £400 (ref.: no win)     |                   |      |         |      | 1.27†   | 0.17 |
| Win $>$ £400 (ref.: no win)        |                   |      |         |      | 1.07    | 0.40 |
| Income at $t - 1$                  |                   |      |         |      |         |      |
| Ln(labor income)                   |                   |      | 1.06    | 0.06 | 1.02    | 0.02 |
| Ln(nonlabor income)                |                   |      | 0.88†   | 0.06 | 0.95*   | 0.02 |
| Share of lab income                |                   |      | 0.92    | 0.74 | 0.54*   | 0.14 |
| Education (ref.: ISCED 1 – 2)      |                   |      |         |      |         |      |
| ISCED 3 – 4                        |                   |      | 0.36    | 0.24 | 0.99    | 0.21 |
| ISCED 5 – 6                        |                   |      | 0.46    | 0.32 | 1.28    | 0.29 |
| Partner ISCED 3 – 4                |                   |      | 1.86    | 1.16 | 1.12    | 0.23 |
| Partner ISCED 5 – 6                |                   |      | 1.25    | 0.73 | 1.07    | 0.24 |
| Others at $t - 1$                  |                   |      |         |      |         |      |
| Age                                |                   |      | 0.82†   | 0.10 | 0.96    | 0.04 |
| Age squared (effects all positive) |                   |      | 1.00*   | 0.00 | 1.00†   | 0.00 |
| Age – partner's age                |                   |      | 0.98    | 0.03 | 0.99    | 0.01 |
| Cohabiting                         |                   |      | 0.30**  | 0.10 | 0.36**  | 0.06 |
| No. children                       |                   |      | 0.93    | 0.17 | 0.83*   | 0.07 |
| Gender norms                       |                   |      | 0.42**  | 0.15 | 0.54**  | 0.07 |
| <i>Personality Traits</i>          |                   |      |         |      |         |      |
| Conscientiousness                  |                   |      | 0.98    | 0.17 | 1.20*   | 0.09 |
| Neuroticism                        |                   |      | 0.88    | 0.14 | 0.88†   | 0.06 |
| Openness to Experience             |                   |      | 0.90    | 0.16 | 0.93    | 0.08 |
| Extraversion                       |                   |      | 1.09    | 0.18 | 0.91    | 0.07 |
| Agreeableness                      |                   |      | 0.79    | 0.15 | 0.92    | 0.08 |
| Pseudo $R^2$                       | .009              |      | .167    |      | .113    |      |
| $N$                                | 1,220             |      | 1,220   |      | 2,480   |      |

Note: Controls not shown: year of the win, number of waves with information on lottery wins, activity status. ISCED = International Standard Classification of Education. † $p < .10$ . \* $p < .05$ . \*\* $p < .01$ .

lottery wins in the three models differed significantly between men and women ( $ps < .05$ , results not shown).

Model 3 shows that when nonplayers and nonwinners were included in the analysis the same story held true. Male bigger winners were more likely to stay with their partner than both nonwinners and small winners. Winners of small lottery amounts did not differ from nonwinners, which reduced concerns about the selective nature of the sample. Here the cutoff was arbitrarily set at £400 [~\$623 USD], but the results held for other cutoffs too. The higher the threshold, the bigger the effects. When going below £250 [~\$389 USD], the effect of being a bigger winner ceased to be significant. For females, a slightly significant difference in union dissolution risk was found between winners of small amounts and nonwinners. This indicates that female winners might have been a more selective group of the general British female population.

Additional analysis (results not shown), which looked at the effects of lottery wins at different points in time, revealed that, up to 2 years after the lottery win, no effects were observed. With increasing numbers of separations observed, it was in the third year that the most significant effect was observed. After that, it seemed to level off gradually, losing significance in the fifth year. Lottery wins postponed separation when men won and did not prevent it permanently.

## *Mechanisms*

To be able to test the hypotheses put forward earlier in this article, I analyzed the mechanisms connecting income with union stability. First, I investigated for which couples the effects found were most pronounced. Second, I examined the mediating effects of satisfaction and consumption.

What kinds of separations were being postponed by lottery wins? An examination of the interactions between wins for men with different kinds of variables (cohabitation vs. marriage, gender norms, earnings, relative earnings of man vs. woman in the couple, satisfaction with partners at  $t - 1$ ), did not yield significant results (results not shown). At the same time, when I looked at the marginal effects of lottery wins at different values of the interacting variables, the kinds of cases that drove the significant results found in this sample became clearer. First, wins did not change the odds of separation for men who were entirely happy with their partners the year before. Second, the marginal effect of lottery wins was significant only for men who earned up to £18,280 in the preceding year (59% of men). When I looked at partners' earnings, however, I observed that the marginal effect of lottery wins was significant only when the partners of men were active in the labor market. The larger the wage or earnings share of men, the smaller the marginal effect of lottery wins. This effect persisted when controlling for levels of male earnings. For male breadwinner couples, the marginal effect of lottery wins ceased to be significant.



Table 3 reflects how lottery wins affected the satisfaction of male and female winners as well as the satisfaction of their partners. Separate regressions were run for each satisfaction variable, and Table 3 is an overview of the regression coefficients taken from each regression. The first column of “Male Wins” refers to the change in satisfaction between  $t - 1$  and  $t + 1$  of men who won, and the second column to that of their partners. The first column of “Female Wins” referred to satisfaction changes of partners and the second to that of the women who won.

A first observation derived from Table 3 is that lottery wins affected satisfaction in a positive way in many domains of life but did so only for men. All coefficients, except one, were negative for women. Men became more satisfied with their income, social life, and leisure time after winning (all significantly different from women at the 5% level, results not shown). The satisfaction of partners was not significantly altered for both male and female wins. At the same time, men seem to have become less satisfied with their social life when their partners won, whereas women became less satisfied with their partner when men won.

Table 3 also shows how lottery wins affected consumption for men and women. The numbers reveal that men increased their spending on leisure time and eating out significantly, whereas no effects were observed for women in these categories (differences between men and women have  $p$  values  $< .01$ , results not shown).

Table 3. Effects of Lottery Wins Taken From Separate Regressions, Each Explaining Change in One Dependent Variable (*ns* = 1,343 for Men and 1,220 for Women)

| Dependent variables                          | Male Wins     |       |                 |       | Female Wins   |       |                 |       |
|--|---------------|-------|-----------------|-------|---------------|-------|-----------------|-------|
|  | Male Behavior |       | Female Behavior |       | Male Behavior |       | Female Behavior |       |
|  | Coef.         | SE    | Coef.           | SE    | Coef.         | SE    | Coef.           | SE    |
| Satisfaction                                 |               |       |                 |       |               |       |                 |       |
| With income                                  | 0.05*         | 0.02  | 0.03            | 0.02  | 0.03          | 0.02  | 0.01            | 0.02  |
| With partner/spouse                          | 0.02          | 0.02  | -0.02           | 0.02  | -0.01         | 0.02  | -0.01           | 0.02  |
| With social life                             | 0.04*         | 0.02  | -0.00           | 0.02  | 0.03          | 0.02  | -0.03           | 0.02  |
| With amount of leisure                       | 0.06**        | 0.02  | 0.01            | 0.02  | 0.02          | 0.03  | -0.02           | 0.02  |
| With use of leisure                          | 0.04*         | 0.02  | 0.01            | 0.02  | -0.01         | 0.03  | -0.03           | 0.02  |
| With life overall                            | 0.01          | 0.02  | 0.00            | 0.02  | 0.00          | 0.02  | -0.03           | 0.02  |
| Individual expenditure                       |               |       |                 |       |               |       |                 |       |
| On leisure (in £)                            | 4.04**        | 0.69  | -0.11           | 0.56  | 0.84          | 0.80  | 0.66            | 0.58  |
| On eating out (in £)                         | 1.71**        | 0.66  | 0.15            | 0.57  | 0.36          | 0.73  | -0.01           | 0.57  |
| Household spending on durables (index)       | 0.003         | 0.003 | 0.003           | 0.003 | 0.009**       | 0.003 | 0.009**         | 0.003 |
| Ln(interest received over savings last year) | 0.02          | 0.04  | 0.02            | 0.04  | 0.01          | 0.05  | 0.09*           | 0.04  |
| Material hardship (index)                    | -0.004†       | 0.002 | -0.004†         | 0.002 | -0.004        | 0.002 | -0.004          | 0.002 |
| <i>N</i>                                     | 1,343         |       | 1,343           |       | 1,220         |       | 1,220           |       |

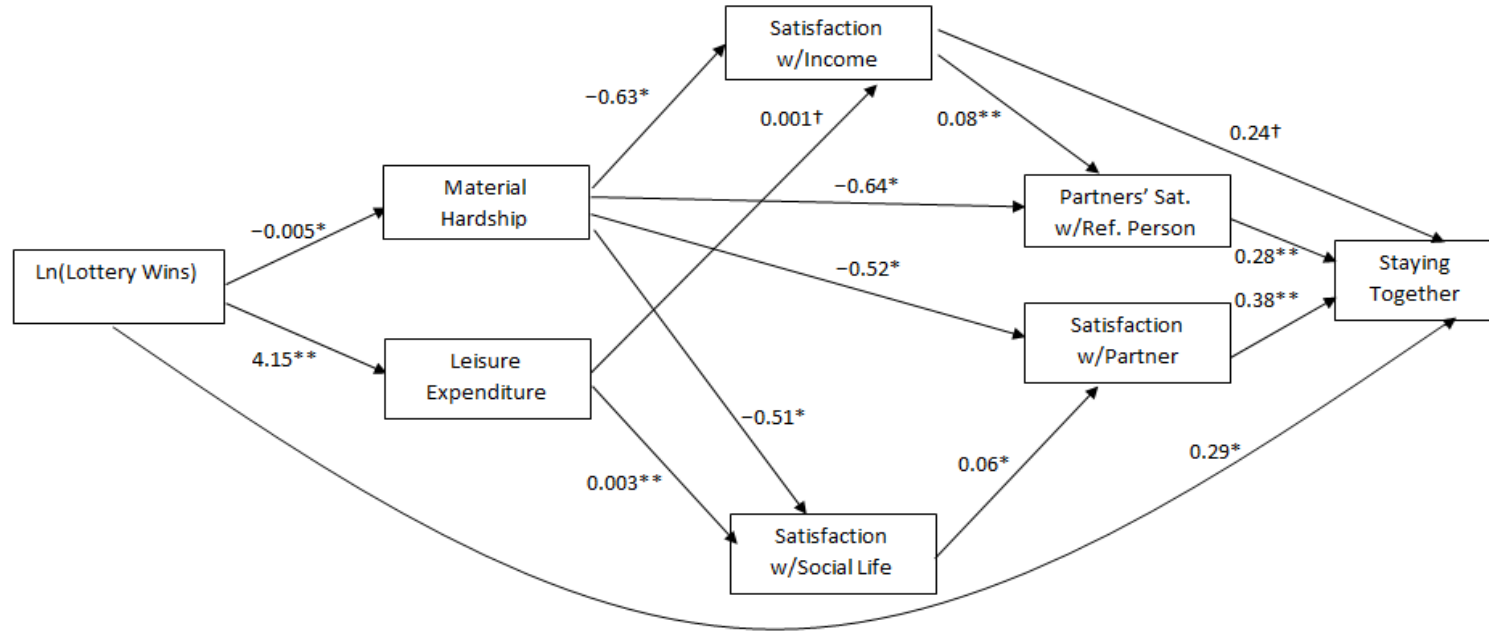
Note: In each regression controls are included for satisfaction levels at  $t - 1$ . Satisfaction with partner is measured at  $t = 0$  and the control at  $t - 1$ . † $p < .10$ . \* $p < .05$ . \*\* $p < .01$ .

Women did not spend their lottery money on leisure or eating out; instead, they saved the money and invested it in consumer durables (but differences with men were not statistically significant). The patterns for male and female spending differed depending on who won the money. Men significantly increased spending on leisure and eating out only when they won themselves and women saved and spent more on durables only when they won themselves too. Hence, it seems that lottery winnings were not shared between partners, because the satisfaction of partners of lottery winners also remained unaltered. This is a relevant finding for the literature on poverty and inequality. Income positions of people are usually determined on the basis of household income under the assumption that income is shared within families (Gardiner & Millar, 2006; Organisation for Economic Co-Operation and Development, 2008).

In congruence with the effects found for separation, additional analysis (results not shown) pointed out that lottery wins only temporarily affected both satisfaction and consumption.

In Figure 2, the results for male wins were put together into a path model explaining staying together at  $t + 3$  by the significant mediating variables of Table 3. The figure shows only the significant paths found. When jointly estimating the effect of lottery wins on satisfaction and consumption, only the effects on satisfaction with social life and income, and the effects on material hardship and leisure expenditure, remained significant. Satisfaction with leisure time and expenditure on eating out were therefore dropped at this stage of the analysis. All other satisfaction and

Figure 2. Path Analysis Estimated With SEM Explaining Staying Together at  $t + 3$  for Men ( $N = 1,343$ ).



Note: “Only significant paths and their corresponding regression coefficients are shown (logit coefficients for staying together)” Exogenous variables (controls) are not shown but were included in all equations. All equations included lottery wins; satisfaction ( $t + 1$ ) equations included consumption; equations for satisfaction of partners ( $t = 0$ ) included satisfaction (Sat.) with income/social life too. The separation equation included all variables but consumption.  $^\dagger p < .10$ .  $^* p < .05$ .  $^{**} p < .01$ .

consumption variables were included as endogenous variables in the analysis.

The path model showed that the effects of lottery wins on satisfaction with income and social life were mediated by changes in leisure consumption and hardship (the direct effects of lottery wins on satisfaction ceased to be significant). The effects of these satisfaction changes on union stability were, in turn, mediated by changes in satisfaction with the partner. At the same time, a significant direct effect of lottery wins on union stability persisted when the effects mediated by changes in consumption and satisfaction were taken into account. In fact, the coefficient for lottery wins remained practically unaltered when excluding the mediating variables (results not shown). This was caused by a nearly significant negative effect of male wins on their partners' satisfaction with the relationship (in some of the robustness checks, it turned significant). It canceled out most of the other positive effects of lottery wins on union stability that were mediated by consumption and satisfaction. Most of the positive effect of male wins on union stability was therefore direct. Male wins thus increased one or both exit thresholds to leave the relationship. Data on who initiated the separation (Sayer, England, Allison, & Kangas, 2011) would be useful to distinguish whose exit threshold was affected by income, but this information was not available.

## Discussion

How does the evidence presented earlier fit with the hypotheses outlined in this article? According to the family stress model, income stabilizes relationships by reducing economic distress and improving marital interaction. In line with that hypothesis, a stabilizing effect on relationships was found when men won the lottery, especially in the case of couples with lower incomes. In addition, increased spending and decreases in material hardship following lottery wins improved satisfaction with income, leisure, and partner. The pathway hypothesized by the family stress model was thus found in the data and can be confirmed. Nevertheless, these positive effects of lottery wins on relationship satisfaction seemed to have been canceled out by other processes at play. This questions the relative importance of the family stress model when explaining union stability. In addition, no stabilizing effects were found for female wins.

The bargaining hypothesis did not directly provide predictions about union stability. At the same time, it predicted that marital satisfaction of the receptor of income would improve after increases in consumption that are aligned to the preferences of the receptor. Congruent with this perspective, the analysis of the mediating variables in Table 3 showed that, when men won, consumption and satisfaction went up for them, whereas satisfaction and consumption remained unaltered for their partners. This did not, however, translate into a greater satisfaction with the relationship. In addition, no changes in satisfaction were observed when women won.

If couples act to reaffirm gender identities, one would expect female wins to destabilize relationships through decreased marital satisfaction of their partners. No such effects were observed.

The dependency perspective predicted that income lowers the exit threshold of the receptor and increases the exit threshold of the partner if a relative understanding of dependency is taken into account. No increased risk of separation was found, which indicates no support for a reduction of the exit threshold of the receptor of income. The reduced odds of separation for male receptors might indicate that the exit thresholds of their partners increased. This is backed up by improved satisfaction with income observed for both partners after lottery wins. In addition, the effect of lottery wins on union stability was not significant for male breadwinner couples, in which dependency of women on men was already high. The numbers therefore fit the relative version of the dependency perspective quite well.

There seemed to be three stories in the data that needed explanation. First, there was the effect of male wins on union stability, which was mediated by increases in consumption and satisfaction. These effects were canceled out by a negative direct effect of lottery wins on the relationship satisfaction of men's partners. Whereas both the family stress model and the bargaining model suggest that income affects types of consumption that increase satisfaction, the evidence seemed to fit the predictions from the bargaining perspective better. Only the satisfaction of the receiver of income was affected (see Table 3). In addition, the path model indicated that the positive

effects reduced family stress should have on relationship satisfaction were canceled out by a negative (but insignificant) effect of wins on relationship satisfaction of the partner. A negative effect on the partners' satisfaction was predicted only by the bargaining model. Earlier research using the same data has shown that men increased unhealthy behaviors, such as smoking and drinking, after winning, whereas mental health was improved (Apouey & Clark, 2009). This shows how men possibly bargained to behave in ways they preferred, but therewith reduced relationship satisfaction of their partner.

The second story to be explained was the effect of male income on exit thresholds to leave relationships (i.e., the direct stabilizing effect of income on relationships). Only the dependency perspective provided predictions that fitted with this pattern. At the same time, because the effect on exit thresholds was measured as a residual category of "everything that relationship satisfaction could not explain," one cannot conclude that all the effects observed were due to changes in dependency. The direct effect that remained after controlling for relationship satisfaction might exist because the measures used in this study were not encompassing enough to capture all effects on satisfaction relevant within relationships. Above all, however, there seems to be the need for more theoretical perspectives capable of providing predictions on how income affects exit thresholds to leave relationships. There might be many other ways in which income increases exit thresholds besides its effects on dependency. The path model shows how a significant direct effect of satisfaction with income on union stability persists



after controlling for satisfaction with the partner. This might suggest that satisfaction with domains of life not directly related to relationship dynamics also influence separation risks.

The third story to be clarified was the difference between men and women. No effects of income on satisfaction and union stability were observed when women won. This could not be straightforwardly explained by the theoretical perspectives outlined earlier. The only empirical patterns that provided a starting point for thinking about an explanation were the differences in consumption observed between men and women. Why did women not spend on leisure or other goods and services that increase satisfaction, whereas men did?

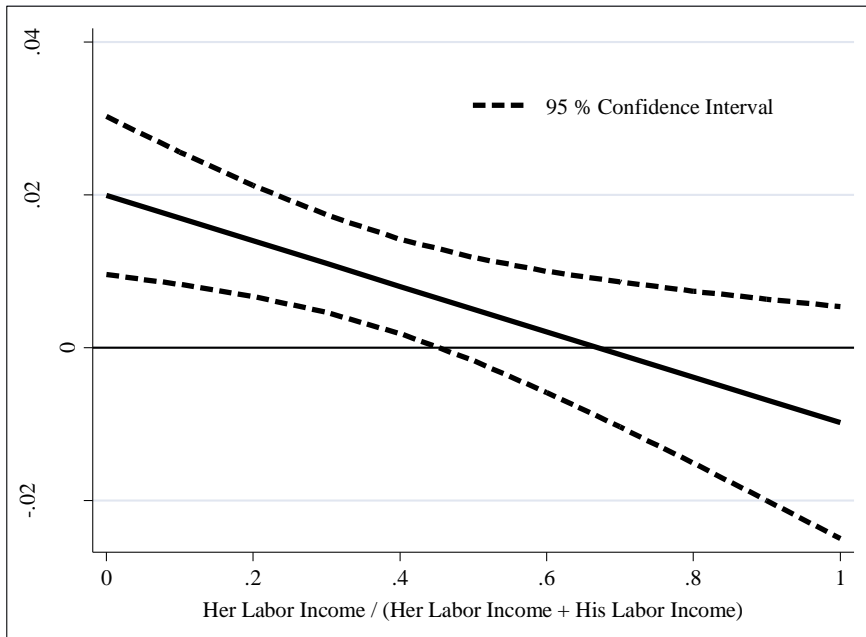
Two alternative explanations seem plausible. Traditionally, women spend more time doing domestic work and managing the household, and they might therefore be more prone to invest their money in goods and services that help the household. In that case, one would expect women with a more traditional outlook on gender roles, and those who do more housework, to spend more on durables. Another explanation might be that the spending of lottery money is negotiated within couples. People who won the lottery will prefer to spend it on goods and services that make them happier. At the same time, the partner of the winner would prefer to spend the money on goods and services that improve the well-being of all members of the household. If a lottery winner has relatively little bargaining power, more investments in the household relative to personal consumption, and vice versa, are expected. Because women are, on

average, in a weaker bargaining position, men might manage to successfully bargain for female lottery wins to be spent on household goods and services.

Some additional analysis gave useful indications. When investigating the effect of lottery wins by the wage share of women, I found that only women with a wage share lower than 60% significantly increased their expenditure on durables. When one looks at labor income shares, one sees that the effect was even more pronounced. Figure 3 shows the marginal effect of lottery wins on durable expenditure by different labor income shares of women. Only women who earned less than 40% of total labor income spent significantly more on durables when they won more. Was this because women spent more time doing work in the household, or because they were more focused on managing the household, or was it the result of bargaining? The first two reasons seem unlikely, because no differences in the effect of lottery wins on durable consumption were observed by housework share or by different scores on the gender norm scale (results not shown).

Traditional and egalitarian women did not significantly spend less or more on durables ( $p$  of interaction = .642), and no significant difference existed between women that do more or less housework ( $p$  of interaction = .507). The bargaining explanation seems the most plausible. Women with low earnings-related bargaining power spent more lottery money on durables than those with high earnings-related bargaining power. Were women able to bargain for outcomes that were favorable to them when their male partners with

Figure 3. Marginal Effect of Wins on Durable Expenditure by Women's Labor Income Shares ( $N = 1,220$ )



Note: Marginal effects were calculated on the basis of a regression explaining expenditure on durables of the household between  $t - 1$  and  $t + 1$ . The  $p$  value of  $\ln(\text{lotterywin}) \times \text{labor income share} = .018$ . For 58% of the women, the effect is significant (under .43). Ninety percent of the women have a labor income share under .7 (where the line crosses zero).

low bargaining power won big? It seems not. Men with a low share of labor income were more likely to spend on durables, but this effect was insignificant ( $p = .574$ ) and less than half the size observed for women.

What arose from this last discussion is a division of effects by gender that reflects already-well-known differences between gender roles ascribed to men and women. Men seemed able to spend their

lottery money with little constraints, whereas women did seem limited when spending their lottery money, because most of them were in a weaker bargaining position compared to their partners. Dependent women, it appears, had to negotiate their lottery money expenditure, which led to solutions that did not make them happy.

This constrained way of operating when women win therefore prevented income from increasing their satisfaction. This research therewith exposed one of the mechanisms through which, everything else equal, separation rates could be lower in gender-egalitarian societies. If women have more bargaining power, this seems to allow them to spend income in ways that satisfy. Similar to the effects observed for men, this might stabilize relationships. Future research on the effect of income in gender-egalitarian societies other than the British one could shed light on the validity of this hypothesis.

### *Conclusions*

This study shows that money matters within relationships. One of its contributions has been to demonstrate, by using a sample of lottery winners taken from the BHPS, that income stabilized relationships, but only when men won. The more money men won, the more they spent on leisure and the more satisfied they became with leisure time. Increased satisfaction with leisure time, in turn, reduced the odds of separation. Combined with the finding that wins reduced the odds of separation for men unsatisfied with their

partners, this suggests that a temporary change in income can distract people from problems within the couple.

The evidence presented showed that, in line with the family stress model, lottery wins increased satisfaction with social life and leisure time after increases in consumption. At the same time, only male winners' satisfaction and consumption went up; those of their partners did not. This suited a bargaining perspective better; so did the observation that the positive effects on relationship satisfaction caused by lottery wins were canceled out by a (insignificant) negative effect of male wins on the relationship satisfaction of their partner. At the same time, these processes accounted for only a small part of the positive effect of income on union stability. Most of the effect of lottery wins on union stability was direct and not mediated by satisfaction changes. Income thus primarily affected the exit threshold for people to leave relationships. A relative version of the dependency perspective predicted that people were less likely to leave relationships if the expected drop in their standard of living is greater, but what part of these effects were actually caused by changes in dependency cannot be verified.

The second contribution of this research was to prove that which partner brings money to the household mattered. Depending on the gender of the person who brought in the money, the effects on consumption, happiness, and separation risk changed. Lottery wins affected satisfaction insignificantly and negatively for women. Women did not spend their money on leisure activities after winning; instead, they spent it on consumer durables and saved

more. Neither type of consumption satisfied women. No differences in women's durable expenditure after winning were observed by gender norms or by women's housework share, whereas differences were observed by labor income shares of women. This made a bargaining explanation most plausible. Men seemed able to convince their partners to spend their lottery wins on the household (which also benefited the men) instead of on themselves (which would have benefited the men less).

The findings of this study provoke some questions for future research. First, they reiterate the existing need for a better understanding of exit thresholds from relationships and their determinants (Amato & Hohmann-Marriott, 2007). There exist few theoretical predictions about how income affects the level of marital satisfaction at which people divorce. At the same time, such exit thresholds seem to play a central role in how income is connected to union stability. Second, a better understanding of the relative importance of different theoretical perspectives is needed. Several theories seem to apply to couple behavior at the same time. The family stress model seems applicable to the effects of income on union stability, but the effects seemed to be overridden by other processes at play that fit better with a bargaining perspective on couple behavior. How such processes canceled out the positive effects of reduced family stress on increasing marital satisfaction could be addressed in future research. Third, the differences in effects found by gender triggers the question of whether women will be spending their money in ways that increase their personal satisfaction in more gender-egalitarian societies. In egalitarian

societies, do men and women spend their lottery money in more similar ways?

Other questions for future research could address some limitations of this research, for example, the unusual sample used and the possibly distinct nature of unexpected income changes that characterizes lottery wins: Are these results applicable to changes in all forms of income? Do permanent income changes permanently reduce the odds of separation? Can the results of this study be generalized to other processes related to partnerships (e.g., finding a partner)? If perceptions about gender roles stood in the way of positive income changes' ability to increase satisfaction, would a reduction in the importance of gender roles improve family life in general?

<sup>1</sup>British monetary amounts reflect 2005 values, whereas the U.S. dollar equivalents reflect 2012 values.

# Appendix



Table A1. Differences Between Lottery Winners and Nonwinners

| Characteristic                                | Men                            |                                 | Women                          |                                   |
|---|--------------------------------|---------------------------------|--------------------------------|-----------------------------------|
|   | Winners<br>( <i>n</i> = 1,059) | Nonwinners<br>( <i>n</i> = 920) | Winners<br>( <i>n</i> = 1,070) | Nonwinners<br>( <i>n</i> = 1,257) |
| Mid-educated (ISCED 3 – 4, %)                 | 37.4                           | 31.1**                          | 41.3                           | 38.2†                             |
| High educated (ISCED 5 – 6, %)                | 45.7                           | 50.9*                           | 36.6                           | 41.4**                            |
| Average labor income (2005 prices, in £)      | 21,393                         | 22,092                          | 10,200                         | 9,534                             |
| Average nonlabor income (2005 prices, in £)   | 1,471                          | 1,676                           | 1,919                          | 2,209*                            |
| Cohabiting (%)                                | 18.3                           | 16.6                            | 17.9                           | 20.3†                             |
| Student (%)                                   | 0.9                            | 1.0                             | 1.4                            | 1.6                               |
| Retired (%)                                   | 17.0                           | 21.4**                          | 16.8                           | 15.5                              |
| Unemployed (%)                                | 1.8                            | 3.9**                           | 1.4                            | 1.8†                              |
| Average age                                   | 46.9                           | 48.5*                           | 45.7                           | 44.6†                             |
| Average no. children in household             | 0.6                            | 0.7**                           | 0.6                            | 0.8**                             |
| Average score on Egalitarianism scale         | -0.09                          | -0.16**                         | 0.03                           | 0.11**                            |
| Average score on Neuroticism scale            | -0.31                          | -0.31                           | 0.21                           | 0.18                              |
| Average score on Conscientiousness scale      | -0.07                          | -0.08                           | 0.04                           | 0.05                              |
| Average score on Openness to Experience scale | 0.06                           | 0.09                            | -0.03                          | 0.00                              |

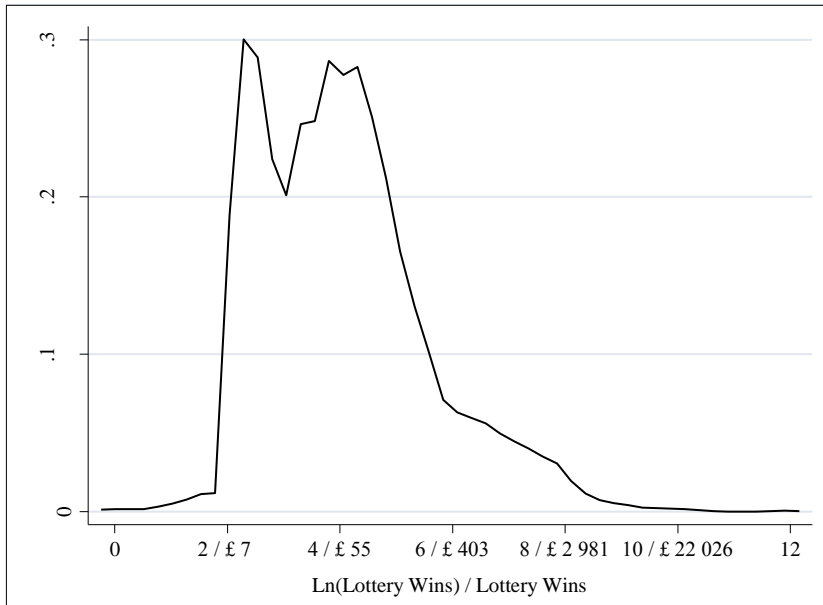
*Note:* The sample comprises people who ever had a partner between 1996 and 2005, divided into people who ever won and people who never won money in that period. For the income and unemployment variables, the sample was restricted to 25- to 60-year-olds. Significance tests for differences in means between winners and nonwinners. Only cases for which all information was available for all waves are included. Averages over all waves taken. ISCED = International Standard Classification of Education. † $p < .10$ . \* $p < .05$ . \*\* $p < .01$ .

Table A2. Ordinary Least Squares Regressions Explaining the Logged Amount of Money Won in the Lottery at  $t = 0$  by Individual Characteristics at  $t - 1$

| Characteristics at $t - 1$           | Men<br>( $n = 1,343$ ) |      | Women<br>( $n = 1,220$ ) |      |
|--------------------------------------|------------------------|------|--------------------------|------|
|                                      | Coefficient            | SE   | Coefficient              | SE   |
| Education, ISCED 3 – 4 (ref.: 1 – 2) | -0.03                  | 0.13 | -0.12                    | 0.13 |
| Education, ISCED 5 – 6 (ref.: 1 – 2) | -0.09                  | 0.13 | -0.11                    | 0.12 |
| Labor income (logged)                | 0.02                   | 0.02 | 0.02                     | 0.01 |
| Nonlabor income (logged)             | -0.00                  | 0.01 | 0.00                     | 0.02 |
| Cohabiting <sup>a</sup>              | 0.04                   | 0.12 | 0.16                     | 0.12 |
| Student <sup>a</sup>                 | -0.35                  | 0.68 | 0.32                     | 0.48 |
| Retired <sup>a</sup>                 | 0.01                   | 0.23 | 0.10                     | 0.20 |
| Unemployed <sup>a</sup>              | 0.06                   | 0.36 | -0.05                    | 0.37 |
| Age                                  | 0.01                   | 0.02 | 0.04†                    | 0.02 |
| Age squared                          | -0.00                  | 0.00 | -0.00†                   | 0.00 |
| No. children                         | -0.01                  | 0.05 | 0.08                     | 0.06 |
| Egalitarianism                       | -0.12                  | 0.08 | 0.09                     | 0.09 |
| Neuroticism                          | -0.11*                 | 0.05 | -0.08†                   | 0.05 |
| Conscientiousness                    | -0.04                  | 0.05 | -0.02                    | 0.05 |
| Openness to Experience               | 0.02                   | 0.05 | 0.04                     | 0.05 |
| Constant                             | 3.88**                 | 0.62 | 1.86                     | 0.62 |
| Adj. $R^2$ of model                  | .01                    |      | .01                      |      |

Note: Controls included number of waves for which information on lottery wins was available for a person and dummies for the year of the win. ISCED = International Standard Classification of Education. <sup>a</sup>1 = yes, 0 = no. † $p < .10$ . \* $p < .05$ . \*\* $p < .01$ .

Figure A1. Kernel Density Plot of Lottery Wins ( $N = 2,563$ ).



Note: Monetary values reflect 2005 rates. In 2012, £1  $\approx$  \$1.56 USD.



## Chapter 3: Was it a mistake? The triggers behind the dissolution of satisfying relationships

### Abstract

*People vary in the level of relationship satisfaction at which they separate. Earlier research has shown how relatively untroubled couples break up too. The reasons why they do so, however, remain unclear. This is especially puzzling given that earlier research has found such couples to experience greater well-being losses than others. In this paper I explore different possible explanations for this puzzle. Using data from the British Household Panel Survey (N = 15 424) I look at the determinants of leaving a satisfying partner in comparison with both those who do not separate and those who separate from an unsatisfying partner. I derive hypotheses from social exchange theory about the motives to leave an untroubled relationship. I find, contrary to expectation, that low barriers to separate play a limited role for satisfied couples who break up. Alternatives to the relationship do seem to be triggers of this kind of dissolution, which was operationalized as the share of singles in a person's age group and region. At the same time, they re-partner slower than others. The personality trait agreeableness appears as a solid predictor of this type of break-up too. The results thereby provide evidence for earlier hypotheses and create valuable material for hypotheses that can be tested in future research. These types of separations seem to be 'mistakes' in the sense that post-*

*separation well-being worsens, and the triggers could be related to relationship processes characterized by the avoidance of conflict, and wrong assessments of the possibilities to access available alternatives.*

Many relationships follow a predictable pattern where either happy couples stay together, or where unhappy couples break up because of high levels of conflict and dissatisfaction. Two other less logical pathways emerge when combining the two elements satisfaction and dissolution. The first one is the combination of low satisfaction and staying together: unhappy relationships that do not dissolve. The second one consists of high satisfaction and breaking up: happy couples that do leave each other. Recent research has identified that a considerable share of divorces follows the second pattern, namely, a trajectory of relatively high satisfaction with the relationship and low levels of conflict (Amato & Hohmann-Marriott, 2007). Studies on the consequences of divorce have marked such kinds of break-ups as having the worst effects on people's well-being (Dronkers, 1999; Amato, 2000; Booth & Amato, 2001; Strohschein, 2005; Kalmijn & Monden, 2006; Amato & Hohmann-Marriott, 2007). Several papers found the effects of parental divorce to be mediated by the amount of conflict between parents before divorcing. A divorce seems beneficial to those children whose parents had high levels of conflict, while more adverse effects were observed for children whose parents did not fight that much before leaving each other (Dronkers, 1999; Amato, 2000; Booth & Amato, 2001; Strohschein, 2005). Literature on the effects of divorce on well-being of adults shows similar results. Studies have found couples with low levels of conflict and high levels of satisfaction to suffer more well-being losses after divorce than others (Kalmijn & Monden, 2006; Amato & Hohmann-Marriott, 2007). Despite the importance given to the nature of the relationship that precedes

divorce, no literature exists on why relatively satisfied relationships dissolve. Recent research has identified the existence of this group of divorces, but has not empirically looked at motives beyond the patterns of post-divorce well-being (Amato et al., 2007; Amato & Hohmann-Marriott, 2007; Amato, 2010; Lavner & Bradbury, 2012). The aim of this chapter is to fill this gap in the literature and to make a first step towards explaining the question: “*Why do relatively satisfied relationships dissolve?*” This type of dissolution is not just odd because a happy relationship is being abandoned but also because of the greater drops in well-being observed for relatively satisfied couples after separation. From a rational choice perspective one would expect persons to divorce only when, on average, increases in well-being are observed after dissolution (Gardner & Oswald, 2005).

I use data from the British Household Panel Survey (BHPS) to look at who leaves a satisfying relationship and what their motives could have been. The objective of this paper is largely explorative in nature due to the absence of earlier research that provides specific hypotheses to be tested. I investigate the correlates of the level of satisfaction at which people separate and explore the validity of a broad set of hypotheses derived from social exchange theory: 1) Relatively satisfied people who separate have an attractive marriage market. 2) Low barriers to separate cause normal fluctuations in relationship satisfaction to lead to union dissolution. 3) High expectations from a relationship can cause small drops in satisfaction to lead to dissolution. 4) Sudden crises fed by adverse



events cause satisfied relationships to unravel quickly due to a lack of resources or relationship skills.

## Relationship Satisfaction and Post-Divorce Well-Being

Research on variation in marital satisfaction trajectories of divorcees has only just started. Amato and Hohmann-Marriott (2007) showed for a sample of divorcees in the U.S. that divorced couples can be clustered into two groups by the trajectory of distress experienced in the years before divorce. On the one hand there are couples defined as high-distress relationships, characterized by high levels of conflict, violence and marital dissatisfaction. These couples have clear motives to divorce, which is also reflected in increased life happiness after divorcing. On the other hand, there are couples defined as low-distress relationships who have average levels of conflict, satisfaction and negative interaction. The motives for these relationships to dissolve seem less clear, especially given that for these couples post-divorce life satisfaction declines compared to their pre-divorce situation. Studies on the so-called 'escape-hypothesis' have found similar results. The escape hypothesis posits that the negative effects of divorce on well-being are less severe for those who escape from a bad marriage. Even though no strong support is found for this hypothesis, some studies show how the effects on well-being are worse for those who were in a relatively satisfying marriage (Kalmijn & Monden, 2006).

Besides looking at the post-divorce well-being of couples, little is known about the motives behind the dissolution of relatively satisfied relationships. What can be expected from a theoretical perspective? I depart from social exchange theory (Levinger, 1965; 1976) to formulate hypotheses about the explanations for satisfying relationships breaking up. Social exchange theory predicts that the decision to divorce is influenced by three categories of factors: 1) benefits from the relationship, 2) barriers to divorce and 3) the availability and attractiveness of alternatives. Bad marriages that stay intact are expected to have low benefits from the relationship, but high barriers to divorce or a lack of alternatives. In contrast, relatively good marriages that dissolve are expected to have good alternatives and low barriers to divorce. From a theoretical perspective we would therefore expect barriers and alternatives to explain the break-up of satisfying relationships. This is in line with suggestions made by Amato and Hohmann-Marriot (2007). Regarding the availability of alternatives they pointed at the possibility that extra-marital relationships, in which most divorcees were involved before divorcing (regardless of relationship satisfaction), might motivate satisfied couples to separate. More in general, it could be the availability of other partners that reflects the alternatives people have to their own relationship. This leads me to hypothesize about the first possible trigger of satisfying relationships that break-up.

*Hypothesis 1:* Relatively satisfied couples who separate have a more attractive marriage market.

In congruence with the barriers element of social exchange theory, Amato & Hohmann-Marriott (2007) showed that being in a low-distress relationship that breaks up is related to some variables that reflect lower barriers (e.g. shorter duration of the marriage, non-religious wedding and non-conservative family attitudes). While barriers to divorce cannot be really called motives, they can be an explanation for satisfied relationships breaking up. The satisfaction with a relationship is likely to fluctuate to some extent over time. When barriers to divorce are absent it might be that fluctuations in an overall happy marital satisfaction trajectory can lead to a break-up.

*Hypothesis 2:* Relatively satisfied couples who break up have lower barriers to separate.

Another scenario could be that the expectations from the relationship were high (Amato-Hohmann-Marriott, 2007). If a person expects happiness to largely depend on the benefits from a relationship, the satisfaction with a relationship will play a larger role in a person's decision making process. A small drop in marital satisfaction is in that case more likely to lead to dissolution, compared to a situation where a person expects the relationship to be relatively less important for happiness. Divorce has many disruptive effects on people's economic and social lives too (Amato, 2010). If the relative value of good partnership is lower compared to other domains of life, people might decide to stay in a relationship to prevent disruption and preserve satisfaction with other domains of life.

*Hypothesis 3:* Relatively satisfied couples who separated have very high expectations from relationships.

Besides barriers and alternatives, it could be that some sudden events both made the relationship dissolve quickly and reduced subsequent well-being at the same time. Events such as unemployment, illness or other unfortunate events could make a relationship fail while this was not desired. The members of the couple might not manage to keep the relationship intact after they experience adverse events. That couples do not survive adverse events might be due to a lack of relationship skills and/or a lack of economic resources (Conger et al., 1990; Dronkers, 2002; Boertien et al., 2012).

*Hypothesis 4:* Relatively satisfied couples who separate experience unexpected negative events that make the relationship unravel quickly.

The aim of this paper is largely explorative in nature. Given the absence of a large body of earlier research, I chose to keep the scope of the empirical part wide rather than strictly testing the separate hypotheses. The empirical section consists of an examination of the correlates of leaving a satisfying partner in order to give a first indication of the validity of the previously presented hypotheses.

## Method

I use data from the British Household Panel Survey (BHPS). The BHPS is a representative longitudinal household survey of the British population, which annually interviewed all individual members of a sample of British households between 1991 and 2009. The first wave dates from 1991; however, the first year in which satisfaction variables were recorded was 1996. The sample selected consists of all people who were in a marriage or cohabitation during the period of observation. This led to a total sample of 15 424 persons who provided 88 267 person-years of information needed to construct the dependent variable used in the analysis (i.e. divorce and relationship satisfaction). Missing values on independent variables were imputed using multiple imputation based on 20 datasets.

Earlier research has found differences by gender in the effects of many variables on divorce (e.g. personality traits, income, education, labor market status; Kalmijn & Poortman, 2006; Lundberg, 2010; Sayer et al., 2011; Boertien, 2012). I therefore analyze two subsamples, one male and one female sample.

## *Measures*

The main dependent variable of this study was a nominal variable reflecting whether a person in a given wave a) stayed in the relationship b) separated but had low relationship satisfaction at the

start of the wave or c) separated while having high relationship satisfaction. Individuals were coded as experiencing a separation when they reported either a separation or a divorce. If more separations per person were observed, only the first one was used in the sample. Of the sample 11.6% experienced a separation during the observation window used in this study. The level of relationship satisfaction in the year before separation was used to divide people who broke up into the two groups that experienced a separation. The question “How satisfied are you with your spouse/partner?” was asked to both partners of the couple individually, allowing the estimation of relationship satisfaction of both partners. Answers were given on a scale ranging from 1 = *not satisfied at all* to 7 = *completely satisfied*. Individuals were categorized as either being in an “entirely satisfied relationship” (i.e. those who gave a 7 out of 7) or a “not entirely satisfied relationship” (i.e. those who gave a 6 or less). This was based on comparing the well-being trajectories of couples having different levels of satisfaction the year before separation. Those who gave 6 out of 7 were similar to those who gave a 5 or less, and very different from those who gave a 7. This suggested that this division led to two qualitatively distinct groups that fit with the categorizations used in earlier studies.

It was chosen to show the results for which the report of only one partner within the couple was used, due to patterns of missing data. Especially around the time of a separation many couples only have one person reporting her or his relationship satisfaction. Basing the categorization on both reports would therefore lead to a significant drop in sample size. In addition, and more importantly, non-

response of the partner might be related to the level of relationship satisfaction. Excluding cases due to missing data would therefore introduce biases into the analysis. However, to make sure this choice did not influence the conclusions of this study, robustness checks were done by using the subsample where reports of both partners were available. Couples who were entirely satisfied but broke up were defined as such when both partners gave 7 out of 7 the year before separation. In general, significance levels dropped due to the lower sample size and reduced variation to explain, but only few differences in coefficients were found. These differences were reported in the results section, but did not change the main conclusions.

Earlier studies have used many different measures for marital satisfaction. The weakness of the one used in this study is that the measure only consists of one question. At the same time, the question used is closest to the concept of marital satisfaction, which is the overall evaluation of the relationship a person has (Fincham & Rogge, 2010). In addition, the question has empirically been shown to be one of the most informative measures of relationship satisfaction (Funk & Rogge, 2007).

The independent variables included in the analysis followed the hypotheses outlined above. The share of single people in a person's age group and region was used as an indicator of the alternatives available to a person. Region was based on a classification of 19 regions provided by the BHPS. A person's age group was defined as individuals up to 7 years older and 3 years younger for women

and up to 3 years older and 7 years younger for men. Distinct age groups were defined for men and women because on average the age of the man is higher than that of the woman in relationships (2.3 years in this sample). Variables used that reflect barriers to separate were: the duration of the relationship in months and its squared term; the number of children in the household; whether a child under 4 lives in the household; a scale measuring a person's gender norms; whether the house the couple lives in is owned by them; and a dummy indicating whether the couple is married or only cohabiting. Gender norms were measured by a standardized scale based on eight questions about respondents' views on gender roles and other issues related to family life ( $\alpha = .68$ ).

To look at expectations from the relationship I used respondents' ratings of the importance for 'life in general' of several items on a scale from *1 = Not Important at all* to *10 = Very Important*: having children, good partnership, good friends, a good job and being independent. For each item, the score was divided by the average score for the other items in order to get the relative importance aspect of the concept into the operationalization. While the importance of things in life is not the same as having high expectations, data limitations led this to be the closest operationalization possible. If people give a high importance to good partnership in life, they expect partnership to be a key element in creating happiness, which is likely to be closely related to a person's expectations from a relationship. The measure used is therefore not ideal and a limitation of this study, but could still give



a good indication whether the relative importance of a relationship matters for the story.

The last hypothesis of this study referred to the experience of life events and the resources and skills to cope with sudden crises to couple life. I included variables reflecting the experience of important life events: changes in the number of people in the household, changes in activity status and changes in health status in the year of separation. Health status was measured by the absolute difference in satisfaction with health between two waves. Satisfaction was measured each wave on a 1 to 7 scale. To measure the ability to deal with shocks to the couple, I included on the one hand indicators of the couples' resources: logged personal labor income in the year of reference (in 2005 prices); the share of labor income brought in by the reference person; logged household income; and level of education. Level of education was measured by three dummies reflecting lower International Standard Classification of Education (ISCED) categories 1 - 2, middle categories (ISCED 3 - 4), and higher categories (ISCED 5 - 6). On the other hand I included personality traits as indicators of possible relationship skills, which were five standardized scales of the "Big Five" personality traits, based on three questions for each trait: Conscientiousness, Extraversion, Agreeableness, Neuroticism, and Openness to Experience ( $\alpha$ 's ranged from .51 to .68). Several of these traits have been proven to be related to marital satisfaction and relationship stability (Robins et al., 2000; White et al., 2004; Heaven et al., 2006; Nofle & Shaver, 2006; Lundberg, 2010; Boertien et al., 2012; Claxton et al., 2012) and could be used as

indicators of relationship skills (see Lucas & Donnellan, 2009 for more information on the different personality traits). Psychologists have argued how personality structures the interaction within relationships, and the ability to deal with relationship problems (Karney & Bradbury, 1995; Huston & Houts, 1998; Heaven et al., 2006;).

Some control variables were included that have been found to relate to divorce risk but did not directly fit with any of the hypotheses. These variables were: age at formation of the relationship, and a dummy indicating whether it was a person's first or higher order relationship (Amato, 2010). In Table 1 the descriptive statistics of the sample are displayed as well as the percentage of cases that have imputed values on those variables. I only selected the cases that did not have missing values on the dependent variables of the analysis: separation and relationship satisfaction (93.6% of cases). All other missing values were imputed using multiple imputation based on 20 imputed datasets.

### *Procedure*

I started out by defining the group membership of the cases. As mentioned, this was based on whether couples stayed intact, or whether people left a satisfying or unsatisfying relationship. After defining group membership of the cases, I investigated whether differences between these three groups could uncover the motives behind the dissolution of satisfied relationships. Competing risk discrete-time event history models were estimated with group membership as the dependent variable. These estimations were

multinomial logit models with each wave of information as a case. Sets of variables that suited with the different hypotheses were included stepwise into the analysis as independent variables.

*Table 1. Descriptive statistics of the sample used*

| Variable                             | Mean  | SD   | Min  | Max  | Missing % |
|--------------------------------------|-------|------|------|------|-----------|
| Age                                  | 46.8  | 15.1 | 16   | 94   | 0         |
| Gender, male = 1; female = 0         | 0.48  |      | 0    | 1    | 0         |
| Education ISCED 3-4                  | 40.7  |      | 0    | 1    | 0         |
| Education ISCED 5-6                  | 34.0  |      | 0    | 1    | 0         |
| Ln(household income)                 | 10.2  | 0.7  | 0    | 14.0 | 0         |
| Ln(labour income)                    | 5.61  | 3.5  | 0    | 12.9 | 0         |
| Home ownership                       | 0.81  |      | 0    | 1    | 0.3       |
| Share of singles in region/age group | 0.27  |      | 0    | 1    | 6.8       |
| Reported alcohol/drug problems       | 0.002 |      | 0    | 1    | 0         |
| Cohabiting, 1 = yes 0 = no           | 0.17  |      | 0    | 1    | 0.5       |
| Higher order relationship            | 0.19  |      | 0    | 1    | 0.9       |
| Duration of relationship in months   | 216   | 183  | 0    | 794  | 28.1      |
| Number of children in the household  | 0.71  | 1.0  | 0    | 8    | 0         |
| Child under 4 years in the household | 0.15  |      | 0    | 1    | 0         |
| Age at formation                     | 28.5  | 8.8  | 16   | 89   | 28.1      |
| Egalitarianism scale                 | -0.02 | 0.5  | -2   | 2    | 2.3       |
| Conscientiousness scale              | 0     | 1    | -3.9 | 1.6  | 18.3      |
| Neuroticism scale                    | 0.12  | 1    | -2.0 | 2.5  | 18.9      |
| Agreeableness scale                  | 0     | 1    | -4.4 | 1.5  | 18.0      |
| Extraversion scale                   | 0.18  | 1    | -3.0 | 2.1  | 18.0      |
| Openness to Experience scale         | 0.13  | 0.9  | -2.8 | 2.1  | 19.2      |
| <i>Relative importance in life:</i>  |       |      |      |      |           |
| Having children                      | 0.96  | 0.2  | 0.1  | 2.9  | 4.1       |
| Being independent                    | 1.00  | 0.1  | 0.1  | 2.3  | 3.9       |
| Good partnership                     | 1.07  | 0.1  | 0.1  | 2.8  | 3.9       |
| Change in household size             | 0.14  |      | 0    | 1    | 8.6       |
| Unemployed the year of separation    | 0.01  |      | 0    | 1    | 2.4       |
| Change in health year of separation  | 0.03  |      | -6   | 6    | 13.9      |
| Satisfaction with spouse/partner     | 6.3   | 1.1  | 1    | 7    | 0         |
| Satisfaction with life overall       | 5.3   | 1.2  | 1    | 7    | 0.5       |

N = 15 424

Two additional analyses were performed. In one analysis the group of those who did not separate was split into a group of individuals entirely satisfied with their relationship and a group of not entirely satisfied individuals. The differences reported were between those who were entirely satisfied and did not separate on the one hand, and those who were satisfied and did separate on the other hand. These results can give insights into whether the results were caused by common determinants of reporting high relationship satisfaction. The other analysis was the robustness check using the reports of both partners to categorize the cases, instead of using relationship satisfaction of one partner only, as explained above.

## Results

Table 2 shows for the sample of people who separated their relationship satisfaction the year before separation, and the average relationship satisfaction of their partners. One can observe that a considerable share (34.9% of men and 27.9% of women) of respondents was still entirely satisfied the year before separating. Around 14% of all couples had both partners saying they were entirely satisfied with their relationship and 38% of all couples had no rating below 6 the year before separation (based on the selective sub-sample that had complete couple data, not shown). I looked at the validity of the different hypotheses by estimating competing risk discrete-time event history models.

*Table 2. Relationship satisfaction the year before separating*

| Relationship satisfaction | % of men | average of partner | % of women | average of partner |
|---------------------------|----------|--------------------|------------|--------------------|
| 7                         | 34.9     | 5.81               | 27.9       | 6.20               |
| 6                         | 24.2     | 5.30               | 21.4       | 5.94               |
| 5                         | 16.0     | 4.80               | 16.2       | 5.46               |
| 4                         | 11.0     | 3.99               | 10.3       | 4.97               |
| 3                         | 5.9      | 4.02               | 9.4        | 5.04               |
| 2                         | 4.1      | 2.93               | 6.7        | 4.26               |
| 1                         | 4.0      | 2.76               | 8.1        | 3.33               |
| Non-missing n             | 834      | 750                | 953        | 744                |
| Missing n                 | 131      | 220                | 160        | 369                |

In tables 3 and 4 the results are displayed for men and women respectively. Only the results for variables that turned out significant in the stepwise inclusion of sets of variables (not shown) were included in these tables. Model 1 displays the differences between individuals who separated a satisfying partner on the one hand (reference category) and those who did not separate or who separated an unsatisfying partner on the other hand. In Model 2 a comparison is also made with the sub-group of people who did not separate and who were entirely satisfied with their partner (also here the reference category consists of those who separated an entirely satisfying relationship). The results can be categorized into three categories. If significant differences were found for the column “no separation”, but no differences were found between the two types of separation, these variables could be labeled as a common separation risk, regardless of relationship satisfaction in that year. If both coefficients in Model 1 were significant and identical, the group of satisfied relationships separating is as different from the ‘no separation’ group as from the ‘unsatisfied break-up’ group. In that

case it can be labeled as a variable characterizing break ups that had high relationship satisfaction only.

If significant differences exist with the ‘unsatisfied’ separation group, but they are not found in comparison with the non-separators, this means that significant differences existed within the group of people who separated. At the same time, it does not distinguish the ‘satisfied’ couples that broke up from those who did not separate. In that case the variables reflect a characteristic that is specific to unsatisfied relationships that dissolved.

When looking at the validity of the different hypotheses for men, it can be observed that the availability of singles in a person’s age group and region seems to be a characteristic specific to satisfying relationships that break up. The share of singles reduces the relative risk of being in the group of ‘no separation’, and the coefficient is identical for the difference with ‘unsatisfied’ break-ups. This lends support for the hypothesis that the availability of alternatives particularly characterizes the break-up of satisfied relationships.

The second hypothesis regarded barriers. In the models, cohabitation was related to separation in general, while not having a child under 4 and egalitarian gender norms characterize the break-ups of satisfied relationships only. But, the coefficients for the latter two decreased considerably and ceased to be significant in the robustness check based on both partner’s reports (not shown). Therefore, factors reflecting barriers do increase the chances to separate, but do not seem to distinguish those who separate a satisfying relationship from other couples who break up. That

Table 3. Competing risk discrete-time event history models explaining separation for men, reference category is separation from an entirely satisfied relationship, N= 7 451 providing 42 349 person-years of information

|                               | Model 1                                |      |               |      | Model 2                               |      |
|-------------------------------|--|------|---------------|------|---------------------------------------|------|
|                               | Separation, t-1 not entirely satisfied |      | No Separation |      | No separation, t-1 entirely satisfied |      |
|                               | RRR                                    | SE   | RRR           | SE   | RRR                                   | SE   |
| Duration                      | 1.01*                                  | 0.00 | 1.01**        | 0.00 | 1.01**                                | 0.00 |
| Duration squared              | 0.99†                                  | 0.00 | 1.00          | 0.00 | 1.00                                  | 0.00 |
| <i>Alternatives</i>           |  |      |               |      |                                       |      |
| Singles in age group/region   | 0.40*                                  | 0.21 | 0.40*         | 0.17 | 0.36*                                 | 0.16 |
| <i>Demographics</i>           |  |      |               |      |                                       |      |
| Age at formation              | 0.99                                   | 0.01 | 1.05**        | 0.01 | 1.04**                                | 0.01 |
| Higher order relationship     | 0.97                                   | 0.19 | 1.02          | 0.16 | 1.00                                  | 0.16 |
| His age – her age             | 0.99                                   | 0.02 | 0.95**        | 0.01 | 0.95**                                | 0.01 |
| <i>Investments/Barriers</i>   |  |      |               |      |                                       |      |
| Cohabiting (1) / married (0)  | 1.12                                   | 0.22 | 0.52**        | 0.09 | 0.42**                                | 0.07 |
| House owner                   | 0.77                                   | 0.14 | 1.05          | 0.15 | 1.01                                  | 0.15 |
| Child under 4 years           | 1.55*                                  | 0.31 | 1.96**        | 0.33 | 2.23**                                | 0.40 |
| Egalitarianism                | 0.76†                                  | 0.12 | 0.79†         | 0.11 | 0.77*                                 | 0.10 |
| <i>Resources/Strain</i>       |  |      |               |      |                                       |      |
| Alcohol problems              | 2.12                                   | 1.05 | 0.38*         | 0.17 | 0.26**                                | 0.12 |
| Deprivation index             | 1.86                                   | 0.77 | 0.44*         | 0.15 | 0.35**                                | 0.11 |
| Ln(Household income)          | 1.06                                   | 0.12 | 1.12          | 0.10 | 1.10                                  | 0.09 |
| Own Ln(Labor income)          | 0.94*                                  | 0.02 | 0.96*         | 0.02 |                                       |      |
| His interest from savings     | 1.48**                                 | 0.16 | 1.46**        | 0.13 | 1.30**                                | 0.11 |
| ISCED 3-4                     | 1.64*                                  | 0.33 | 1.32*         | 0.21 | 1.22                                  | 0.19 |
| ISCED 5-6                     | 1.83**                                 | 0.42 | 1.34          | 0.24 | 1.18                                  | 0.21 |
| <i>Personality</i>            |  |      |               |      |                                       |      |
| Openness to Experience        | 1.09                                   | 0.12 | 1.07          | 0.10 |                                       |      |
| Extraversion                  | 0.83*                                  | 0.09 | 0.83*         | 0.07 | 0.85*                                 | 0.07 |
| Agreeableness                 | 0.75**                                 | 0.07 | 0.86†         | 0.08 | 0.90                                  | 0.08 |
| Conscientiousness             |  |      |               |      | 1.18†                                 | 0.11 |
| <i>Relative importance of</i> |  |      |               |      |                                       |      |
| Children                      | 0.88                                   | 0.31 | 3.17**        | 0.97 | 3.50**                                | 1.10 |
| Good partnership              | 0.88                                   | 0.51 | 20.7**        | 10.6 | 20.9**                                | 10.7 |

Note. † p < 0.10; \* p < 0.05; \*\* p < 0.01

earlier research found this to be the case might be due to using only information from one partner in the couple. The duration of the relationship was negatively related to leaving a satisfying relationship, but whether this reflects barriers or something else cannot be determined.

When looking at the role of sudden events, no significant results were found. Events such as unemployment, household mutations and health changes were as likely to precede a wave of staying intact as one reporting a separation of a satisfying relationship. Effects were found when looking at resources, which could reflect the ability to deal with sudden events that were not captured by the measures of events used in this study. However, effects did not go in the expected direction. Labor income of men increases the chance of leaving a satisfying partner compared to both not separating and breaking up with an unsatisfying partner. Measures reflecting his savings, alcohol problems and deprivation within the household were related but disappeared in the robustness check done with reports of both partners. These differences in results are likely to indicate a negative effect of these variables on wives' satisfaction which are not reflected in the husband's relationship satisfaction. Especially in the case of his alcohol problems, his savings, and as noted above, him being traditional and having a small child, her satisfaction is likely to be lower, while his relationship satisfaction is affected to a smaller extent. Resources therefore do not seem related to separating a relationship where both partners were satisfied. It does seem to be the case that those who separated an apparently good relationship were less educated



than both others who separated and those who did not break up at all.

Another resource to deal with problems might be a favorable personality. The results point out that extraversion and agreeableness seemed to be specifically characterizing people who left a satisfying relationship. Remarkable is that agreeableness is a significant negative predictor of leaving an unsatisfying relationship compared to not separating (not shown), but a significant positive predictor of leaving a satisfying relationship compared to not separating. This therefore seems to reflect something specific to the process of leaving a satisfying relationship rather than the possession of a skill that stabilizes relationships in general.

A proper test of the hypothesis that events matter requires an interaction of resource variables with events. It is the inability to deal with events that can lead to dissolution. However, none of the significant resource variables' interactions with the different events had p-values below 0.10. Therefore, no support was found for the hypothesis that sudden events and the ability to deal with them explain the break-up of apparently happy couples.

Finally, no support was found for the hypothesis that high expectations from a relationship are related to leaving a satisfying partner. The relative importance of good partnership was higher for those who did not separate compared to both groups who broke up.

In Table 4 the results for women are displayed. Results were similar to those for men when comparing women who left a happy

relationship to women who did not separate. Exceptions were the significant effects found for the transition to unemployment and home ownership. In addition, egalitarianism, having a child under 4 and labor income did not matter (but household income did) in the models for women. The effect of home ownership could be explained by the absence of controls for male education.

When looking at the differences within the group of women who separated, results changed compared to men. Very few separation risks specific to ‘satisfied’ break-ups were found to be significant in the models for women. Alternatives did not seem to matter, and barriers did not do so either, except a marginally significant effect for cohabitation. Events and the resources to deal with them also were not important. Significant effects were found for women’s education which also distinguishes ‘satisfied’ separations from the rest. But other significant effects found for deprivation and labor income only mattered for the difference with those who separated an ‘unhappy’ relationship, marking it as factors characterizing ‘unsatisfied’ break-ups. The rest of the resources and personality traits were not significant discriminators. Marginally significant results were found for the importance of children and being independent, but not for the importance of good partnership, thus not providing support for the hypothesis that expectations are higher for those who leave a satisfying relationship.

Overall, women’s characteristics did not matter for distinguishing those who separated a satisfying relationship from others who separated, with the exception of education. The results of this

Table 4. Competing risk discrete-time event history model explaining separation for women, reference category is separation from an entirely satisfied relationship, N= 7 973 providing 45 918 person-years of information

|                               | Model 1                               |      |               |      | Model 2                              |      |
|-------------------------------|---------------------------------------|------|---------------|------|--------------------------------------|------|
|                               | Separation t-1 not entirely satisfied |      | No Separation |      | No separation t-1 entirely satisfied |      |
|                               | RRR                                   | SE   | RRR           | SE   | RRR                                  | SE   |
| Duration                      | 1.00†                                 | 0.00 | 1.00*         | 0.00 | 1.00                                 | 0.00 |
| Duration squared              | 1.00                                  | 0.00 | 1.00          | 0.00 | 1.00                                 | 0.00 |
| <i>Alternatives</i>           |                                       |      |               |      |                                      |      |
| Singles in age group/region   | 0.72                                  | 0.39 | 0.46          | 0.22 | 0.71                                 | 0.34 |
| <i>Demographics</i>           |                                       |      |               |      |                                      |      |
| Age at formation              | 1.01                                  | 0.02 | 1.06**        | 0.01 | 1.06**                               | 0.01 |
| Higher order relationship     | 1.15                                  | 0.21 | 0.82          | 0.13 | 0.77                                 | 0.12 |
| <i>Investments/Barriers</i>   |                                       |      |               |      |                                      |      |
| Cohabiting (1) or married (0) | 0.71†                                 | 0.15 | 0.35**        | 0.07 | 0.29**                               | 0.05 |
| House owner                   | 1.01                                  | 0.18 | 1.32†         | 0.20 | 1.34†                                | 0.20 |
| Egalitarianism                | 1.13                                  | 0.17 | 0.89          | 0.12 | 0.90                                 | 0.12 |
| <i>Events</i>                 |                                       |      |               |      |                                      |      |
| Transition to unemployment    | 1.13                                  | 0.43 | 0.48*         | 0.16 | 0.48*                                | 0.16 |
| <i>Resources/Strain</i>       |                                       |      |               |      |                                      |      |
| Deprivation index             | 3.78**                                | 1.61 | 0.93          | 0.35 | 0.68                                 | 0.26 |
| Ln(Household income)          | 1.11                                  | 0.09 | 1.15*         | 0.08 | 1.13†                                | 0.08 |
| Own Ln(Labor income)          | 1.07**                                | 0.03 | 1.03          | 0.02 | 1.01                                 | 0.02 |
| Her interest from savings     | 0.91                                  | 0.09 | 0.98          | 0.09 | 0.99                                 | 0.09 |
| ISCED 3-4                     | 1.84**                                | 0.37 | 1.38†         | 0.23 | 1.21                                 | 0.20 |
| ISCED 5-6                     | 1.88**                                | 0.43 | 1.56*         | 0.30 | 1.27                                 | 0.25 |
| <i>Personality</i>            |                                       |      |               |      |                                      |      |
| Conscientiousness             | 0.98                                  | 0.10 | 1.18†         | 0.10 | 1.25**                               | 0.10 |
| Extraversion                  | 0.91                                  | 0.09 | 0.84*         | 0.07 | 0.87†                                | 0.08 |
| Agreeableness                 | 0.95                                  | 0.10 | 0.90          | 0.08 |                                      |      |
| <i>Relative importance of</i> |                                       |      |               |      |                                      |      |
| Children                      | 0.47†                                 | 0.22 | 2.67*         | 1.18 | 2.73*                                | 1.21 |
| Good partnership              | 0.44                                  | 0.25 | 19.7**        | 0.27 | 29.4**                               | 15.9 |
| Being independent             | 0.22†                                 | 0.18 | 0.38          | 12.2 | 0.32                                 | 0.23 |

Note. † p < 0.10; \* p < 0.05; \*\* p < 0.01

section did not change when comparing to people who were satisfied with their relationship but did not separate. In general, coefficients were very similar when comparing satisfied break-ups to individuals who were content and did not break up (last columns of Tables 3 and 4). This suggests that the former group is not a subgroup of satisfied relationships, but instead they seem to have particular characteristics that differentiate them from all the other three groups. To put it differently, the significant predictors found were not common predictors of high relationship satisfaction, but were predictors of separating from a satisfying relationship.

## Discussion

The results from this study supported one of the hypotheses formulated at the start of the paper. An attractive marriage market, operationalized as the share of singles in a person's region and age group, was related to having separated from a satisfying partner only. This result, however, only held for men. No support was found for the hypotheses that sudden events or expectations played a role for both men and women. Education, a resource that can be used to deal with crises, did distinguish those who separated after being happy with their partners from others, but education can be a proxy for many other variables too. The hypothesis that those who leave a satisfying relationship have lower barriers was only partially supported. While these individuals did have lower barriers compared to those who did not separate, variables indicating barriers did not distinguish them from others who broke up.

Alternatives therewith seemed to be the only trigger from the hypotheses that specifically characterized the break ups of satisfying relationships. Some other variables were consistently related to this kind of break up specifically but did not fit directly with any of the hypotheses: scoring high on the personality traits agreeableness and extraversion, having a short duration of the relationship and lower education. At the same time, except for education, all these characteristics only mattered for men. Women's characteristics did not matter for the distinction between the two kinds of break-ups.

Several interesting questions emerge from these observations. The first is based on the findings of earlier research that those who separate a satisfying relationship experience drops in well-being. If alternatives are the triggers for the break-up, it should be expected that the alternatives available are better than the status quo, and will therefore lead to increases in well-being. Is this the case for this sample? Figures 1 and 2 show how the satisfaction with life in general develops over time for the different groups studied in this paper.

The time axis reflects the time since separation for those who separated or the time since reaching age 33 for those who did not separate, which was the average age at which people broke up in this sample. Cases were categorized based on their relationship satisfaction at t-1 and the experience of separation. It can be observed from both graphs that those who left a satisfying relationship had relatively high life satisfaction that increased until

Figure 1. Average life satisfaction by years since separation or reaching age 33 for those who did not separate, men. N = 7 451

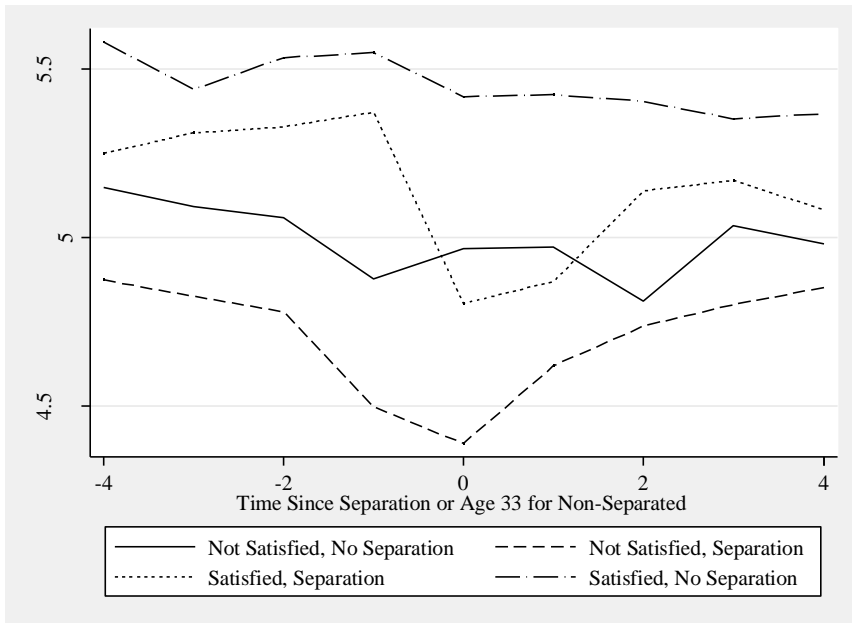
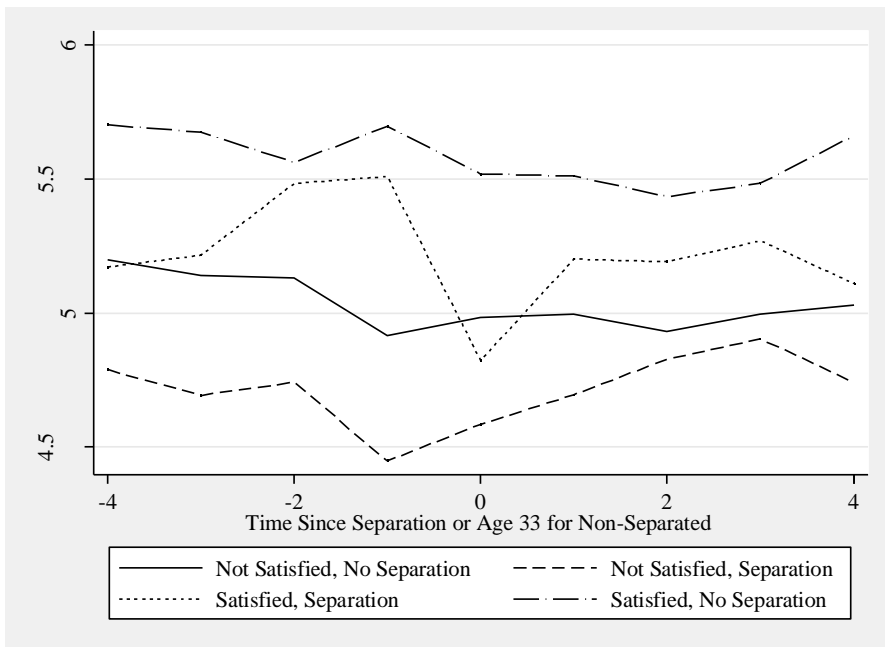


Figure 2. Average life satisfaction by years since separation or reaching age 33 for those who did not separate, women. N = 7 973



the moment of separation. This is followed by a sudden drop in life satisfaction and a subsequent small recovery, but no return to initial levels. In contrast, those who separated after an unsatisfying relationship did so after a low and decreasing trajectory of happiness, and directly experienced increases in life satisfaction above pre-separation levels.

Additional analyses (not shown), showed that those who left a satisfying relationship had a significantly bigger drop in life satisfaction after  $t-1$  than all other three groups. A dummy indicating pre-separation vs. post-separation years showed a significant decline for this group, and a decline that was significantly worse from all other three groups when interacting period with group membership. There therefore seems little evidence that the alternatives to the relationship were more attractive than the current situation for those who separated a satisfying relationship. Did these individuals actually access the available alternatives? When looking at the probability to re-partner it appears that the probability to find a new partner is lower for those who left a satisfying relationship than for others (shown in appendix A1, based on discrete-time event history models explaining re-partnership. Re-partnership was defined based on whether respondents reported relationship satisfaction or not, i.e. cohabitation was not a requisite to be defined as having a partner). These results could indicate that these men (since the alternatives only mattered for men) could have made a wrong assessment of their access to or quality of alternatives while in their relationship. The data at hand did not allow providing firm evidence for this

statement, but future research could investigate this possibility. It can also be argued that the share of singles in a person's age group and region just reflects higher separation rates in general and therefore affects the probability to leave a satisfying relationship overall. However, this should also be reflected in the risk of ending an unsatisfying relationship, but the results showed that the share of singles was not related to such types of separations.

The significance of the personality traits extraversion and agreeableness also provided material for new hypotheses. Extraversion might fit well with the explanation based on the availability of alternatives. Agreeableness on the other hand might point at a type of relationship dynamic that might trigger the dissolution of 'happy' couples. Agreeableness is a personality trait characterized by the 'avoidance of conflict' or 'the tendency to agree with others'. While agreeableness lowers the risk of separation in general, those who separate a satisfying relationship have higher levels of agreeableness than all other groups. If people do not realize or ignore that there are flaws in their relationships, this might lead to high reported relationship satisfaction for both partners, and a sudden break-up when the problems surge or cannot be ignored anymore.

Especially the agreeableness levels of men were found to be relevant in this study. This fits with earlier research showing that women are more sensitive to marital problems than men (Amato & Rogers, 1997). Also in general it seemed to be the characteristics of men that mattered for the separation of a satisfying relationship.



Women's characteristics in such couples were similar to those of women who left an unsatisfying relationship. This suggests that it were men's characteristics driving the dissolution of 'happy' relationships. The share of singles in the men's age group and region mattered, as well as their levels of agreeableness, and various other variables. Are men the agents behind the break-up of satisfied relationships, while women are more often driving dissolution after a period of dissatisfaction and conflict? Future research can further investigate the validity of this proposition. Especially data on who initiated the separation (Kalmijn & Poortman, 2006; Sayer et al., 2011) would be valuable, but was not available in the dataset used in this study.

Summing up, the results of this study confirmed one hypothesis proposed in earlier studies: those who leave a satisfying relationship had a high availability of alternatives. This paper also provides two new hypotheses to be tested in future research: 1) the avoidance of conflict can trigger the dissolution of satisfied relationships 2) men seem to be the agents behind this kind of break up. The results point at two types of processes that could both have been 'mistakes', especially given the drops in well-being observed for this group of people after separation. In addition, both processes seem to indicate a rather short-term horizon for decision making. Men seem to leave a relationship when there are a lot of singles in their environment, but fail to benefit from it in terms of finding a new partner or increasing post-separation happiness. Also men's agreeableness could reflect their unawareness of problems in their relationship or the failure to realize their preferred relationship dynamics due to the

avoidance of conflict. The third variable that was consistently related with this kind of break up was the duration of the relationship. It is especially in the early years of the relationship that these kinds of mistakes are likely to take place, were they indeed to be driving the patterns observed. At the start of a relationship people might not know for sure with whom they want to be and how they want their relationship to look like.

Future research is required to look at the validity of these suggestions and properly test the hypotheses put forward. This study was largely explorative in nature, and only provided some general insights into the validity of different hypotheses. Proper tests would be required to test the different explanations emerging from the analysis. In particular, the measures used for expectations from the relationship were not ideal and could therefore have missed some of the related processes at play. Future studies could also address some of the other limitations of this study. Only one measure of relationship satisfaction was used here. While no other indicators were available in this dataset, future research could look at whether results change when including measures of conflict and other relationship dynamics. All in all, this paper did not provide a definite answer on the question why relatively satisfied couples break up, but it did show that alternatives seem to matter and provided for new hypotheses to be created that can be tested in future research.

## *Conclusion*

Couples who separate after having an unsatisfying relationship seem to have clear motives to do so, but for couples who separate after having a satisfying relationship this is less the case. In this paper I showed, in line with earlier research from the U.S., how a considerable share of separations in Britain follows relationships that were reported as satisfying by respondents in the year before dissolution. If the benefits to the relationship are high, one would expect the alternatives to the relationship to be good and the barriers to leave low. I found support for the first and partial support for the second statement. Indicators of barriers were related to separation in general but not to leaving a satisfied relationship in particular. At the same time, the alternatives to the relationship for men did seem to trigger such separations. The share of singles in a men's region and age group was related with separating from a 'happy' couple but not from an 'unhappy' one. At the same time, these men did not find a new partner more quickly than others. Other hypotheses regarding sudden events and expectations from relationships found no support. An interesting positive association that did emerge was with the level of "agreeableness" of the man. Could it be that giving in too much towards preferences of the other partner and avoiding conflict can be an important trigger of satisfied relationships breaking up? Or would less 'agreeableness' just lead to lower relationship satisfaction and make the break-up more foreseeable? Both significant results found in this study point at possible mistakes in the decision-making process made by men. Were these separations later indeed considered as mistakes by these men?

Could it be that men are the initiators behind this kind of break-up and could these mistakes be avoided?

## Appendix

Table A1. Discrete-time event history models explaining re-partnering after separation

|                        | Men     |      |         |      | Women   |      |         |      |
|------------------------|---------|------|---------|------|---------|------|---------|------|
|                        | Model 1 |      | Model 2 |      | Model 1 |      | Model 2 |      |
|                        | OR      | SE   | OR      | SE   | OR      | SE   | OR      | SE   |
| Calendar year          | 0.98    | 0.02 | 0.98    | 0.02 | 0.98    | 0.01 | 0.98    | 0.01 |
| Time since separation  | 0.81**  | 0.02 | 0.79**  | 0.02 | 0.84**  | 0.02 | 0.84**  | 0.02 |
| Entirely satisfied t-1 | 0.82    | 0.10 | 0.69*   | 0.13 | 0.79*   | 0.09 | 0.83    | 0.11 |
| Time*entirely satisf.  |         |      | 1.06    | 0.05 |         |      | 0.98    | 0.03 |
| <i>N</i>               |         |      | 834     |      |         |      | 953     |      |

Note. †  $p < 0.10$ ; \*  $p < 0.05$ ; \*\*  $p < 0.01$



## Conclusion: The importance of barriers to divorce

This overall conclusion serves to link back to the overarching framework presented in the introduction of the thesis, but first an overview of the findings of this thesis.

I started the empirical part of this thesis by looking at the determinants of the negative educational gradient of divorce for women (Chapter 1 was co-authored with Juho Härkönen). We argued that many explanations of the gradient explicitly or implicitly ascribed a central role to differences in marital satisfaction trajectories by education, but that no empirical support exists for this notion. Using data from the BHPS we showed this notion to be incorrect because marital satisfaction trajectories were practically identical by educational levels of women. We looked at other possible explanations of the educational gradient and found home ownership and parental divorce to be two important variables that explain a large part of the story. Home ownership pointed at the role of joint investments and economic barriers to divorce in general, and parental divorce might be an indication of the role of moral barriers to divorce. Female education was related with a reduction in financial strain, which in turn increased marital satisfaction, but these effects on marital satisfaction were cancelled out by other unobserved processes at play or too small to cause a significant overall relationship between education and marital satisfaction.

Chapter 2 was the subsequent empirical chapter, which aimed to establish whether the association between income and separation is causal or not, and to uncover the causal chain connecting the two variables. I used the data from the BHPS to look at the effects of small to medium sized lottery wins as measures of temporary exogenous income changes. The results showed that when men won, relationships stabilized significantly, at least during the first 4 years following the win. When women won, no significant changes in separation risk were observed. I shed light on the causal chain connecting income to separation by looking at subsequent changes in consumption patterns and satisfaction with various domains of life. While men started spending more on leisure time and eating out after winning, women spent more on durables and saved their money. Only expenditure on eating out and leisure time increased satisfaction with the relationship, social life and leisure time. These gender differences seemed related to the lower bargaining power of women. While this causal chain connected income to separation risk, the majority of the effect of lottery wins on union dissolution was direct and not mediated by marital satisfaction.

Both Chapters 1 and 2 of the thesis showed that marital satisfaction is not the main mediator that connects resources to union dissolution. Instead variation in the levels of marital satisfaction at which people break up seems important. In Chapter 3 I therefore looked at one particular case that is of interest in this respect: the dissolution of couples who were relatively satisfied with their relationship. In the analysis I compared the relative risk of leaving a satisfying relationship to the risk of not breaking up or leaving an



unsatisfying relationship. The results suggested that while barriers to divorce were related to leaving a relationship in general, they do not characterize the dissolution of satisfying relationships in particular. Instead, leaving a satisfying partner seemed related to the presence of singles in a men's environment and his score on the personality trait agreeableness. This observation, combined with the result that life satisfaction does not return to initial levels for these couples, provokes the question whether these break ups are due to processes that are characterized by a short-term decision making horizon.

### Answers to the Research Questions

The main questions that were posed in the introduction of this thesis were: Why do socioeconomic disparities in divorce risk exist? Is Goode's proposition correct that, today, variation in marital satisfaction determines inequalities in divorce risk? What is the importance of approaches focusing on financial stress and its impact on marital satisfaction when explaining the relationship between resources and union stability? How can the relationship between resources and divorce risk in general be explained?

The existing literature has been largely based on Goode's arguments, who predicted that over time, when barriers to divorce erode, the lower educated will end up divorcing more due to the increased financial pressures they experience and/or their possible worse abilities to keep a relationship intact (1962; 1963). So far, the

only empirical evidence supporting this theory is that, indeed, today those with fewer resources divorce more than others (Hoem, 1997; Berrington & Diamond, 1999; Jalovaara, 2001; 2003; Teachman, 2002; Raymo et al., 2004; Chan & Halpin, 2005; Härkönen & Dronkers, 2006; de Graaf & Kalmijn, 2006; Park et al., 2009; Cooke & Gash, 2010; Lyngstad & Jalovaara, 2010; Bernardi & Martinez-Pastor, 2011a; 2011b; Salvini & Vignoli, 2011; Chen, 2012).

The processes that underlie this pattern are unknown, and this implies a gap in the literature on socio-economic disparities in demographic behavior. The main contribution of this thesis was to start filling this gap. The papers presented provided insight into whether it are indeed the mechanisms suggested by Goode that lead those with fewer resources to divorce more, and if not, which other mechanisms do seem to matter. The papers of this thesis show that each of the expectations about mechanisms at play posed by Goode does not seem to hold. Marital satisfaction is not mediating the negative correlation between resources and divorce, and explanations based on the alleviation of financial stress seem to be relatively unimportant too when explaining the socio-economic gradient in divorce.

All three empirical chapters of this thesis suggest that it is not through marital satisfaction that resources are connected to divorce risk. Chapter 1 showed that variation in marital satisfaction is not what explains the negative relationship between female education and divorce. Chapter 2 showed that income has a causal effect on

separation for men but its effects are primarily direct and not mediated by marital satisfaction. And Chapter 3 showed that leaving a satisfied relationship is consistently related to lower levels of education for both men and women. These results emphasize the importance of other explanations than those that go through marital satisfaction. Barriers to divorce matter, contrary to the expectation of Goode that barriers cease to be of main importance for the socioeconomic gradient in divorce risk once a negative educational gradient is reached. While this thesis did not investigate dynamics over time, the thesis did show that it is still variation in barriers that matters rather than marital satisfaction today in Britain, a context where the socioeconomic gradient has shifted over time.

Chapter 1 suggested that economic and moral barriers to divorce are greater for the higher educated than for others, and that these factors partly explain the relation between education and divorce for women. Were in the past legal, social, and economic barriers higher for the lower educated, as argued by Goode (1962; 1963), they seem to be lowest for them today. This suggests that while resources were needed to overcome barriers in the past, resources have become barriers to divorce themselves now. While barriers to divorce have undoubtedly become lower over the last decades, they still play an essential role, especially when it comes to explaining how divorce risk is distributed across educational groups.

How does this fit with the large body of literature that has shown that socio-economic variables such as unemployment and income affect divorce risk through marital satisfaction? (Conger et al, 1990;

1994; 1999; 2010; Oppenheimer, 1997; Ono, 1998; Jalovaara, 2001; Kraft, 2001; Hansen, 2005; Lewin, 2005; Poortman, 2005; Amato et al., 2007; Teachman, 2010). Chapters 1 and 2 have shown that resources do lower financial hardship, deprivation, and alcohol problems. In addition, they increase satisfaction with leisure time. These factors increase marital satisfaction, which, in turn, is by far the strongest predictor of divorce, also in this thesis. Therefore, the process of resources increasing marital satisfaction through reduced strain does seem to take place. However, as the results of Chapters 1 and 2 point out too, both education and lottery wins were not related to marital satisfaction overall. This means that while the alleviation of financial strain does affect marital satisfaction, these effects are overruled by other effects taking place at the same time, or were not large enough to significantly change marital satisfaction overall. The argument that resources affect marital satisfaction therefore stays valid, but its importance for the purposes of this thesis, explaining the relation between resources and divorce, is limited.

The accumulated evidence of this thesis makes two main contributions to the debate on family polarization. Firstly, marital satisfaction does not explain socioeconomic disparities in divorce risk. Instead, barriers to divorce seem to matter. Secondly, resources do alleviate financial pressures which increase marital satisfaction, but these effects are overruled by other processes, or are not sufficiently large to affect marital satisfaction in a significant manner overall. The importance of this explanation, central to many theoretical and empirical accounts of socio-economic disparities in demographic behavior, can thus be questioned when explaining the

gradient in divorce risk. In the next section I will discuss the further consequences these findings have for the theoretical issues raised in the introduction of this thesis.

### *Theoretical Contributions*

What are the implications of my findings for the different theoretical perspectives discussed in the introductory chapter? The theoretical contribution of this thesis was to look at family behavior from a social exchange theory point of view. Did the empirical division of effects on divorce into those that go through marital satisfaction, and those that go through barriers give new insights about the validity of different theoretical perspectives?

In the introduction of this thesis a division of effects of female resources on divorce into four components allowed for testing the validity of different theoretical perspectives. This approach allowed me to test the validity of four mechanisms about family dynamics that main theories predict:

- 1) It was argued that if Becker's arguments about the stabilizing effects of specialization were true (due to increased levels of marriage-specific capital), we would observe a positive effect of female resources on divorce risk that would be mediated through barriers. No empirical support was found for this argument.
- 2) I posited that if the 'doing gender' perspective were valid, one would observe a positive effect of female

resources on divorce, which was mediated by marital satisfaction. Such effects were also not found in any of the empirical chapters of this thesis.

3) Theory had predicted a negative effect of female resources on divorce risk based on the general positive effects of role sharing and having a higher educated wife for the relationship, as well as the alleviation of financial strain by female resources (Becker et al, 1977; Oppenheimer, 1997). I argued that if these mechanisms were at play this should result in a negative effect of resources on divorce that was mediated by marital satisfaction. This did not turn out to be the case. While negative effects on financial strain of female education were observed in Chapter 1, the relative importance of these effects was small and, overall, female resources were not related to marital satisfaction.

4) That the negative effect of female resources on breaking up seems to go through barriers, rather than marital satisfaction, lends support to the argument posited by Oppenheimer (1997). She argued that increased absolute income and scale advantages that economic role sharing provide, pose barriers for couples to leave each other. The general observation in this thesis that the effects of resources are not mediated by marital satisfaction lends support to this statement. In addition, the mediating role found for home ownership in Chapter 1 suggests that increased female resources enable investments in relationships that increase

dependency and the barriers to divorce, rather than that dependency is reduced due to decreased specialization.

Chapter 1 also pointed to the role of moral barriers, it could be that social status losses are correlated with female resources. This would point to higher barriers to divorce once women have increased levels of resources. The possible importance of satisfaction with domains of life other than marital satisfaction found in Chapter 2, such as leisure time and social life, would be an indication of such increased possible losses after divorce. Future research would be required to investigate whether these economic and moral barriers form an exhaustive explanation for the negative educational gradient in divorce or whether additional theoretical explanations are required.

The main theoretical contribution of this thesis has been to show which specific mechanisms proposed by theoretical perspectives hold and which ones do not. Earlier research often fails to do so because the overall predictions regarding the effects of resources on divorce are often identical from the different theoretical perspectives. The social exchange approach applied in this thesis allows me to show that the specific mechanisms that were proposed by Becker and by the 'doing gender' perspectives were not at play, or at least not to a significant extent. For Oppenheimer's argument about the alleviation of financial strain by female resources no empirical support was found. At the same time, her suggestion that female resources can increase dependency and therewith reduce divorce risk seemed to be valid.

## Discussion

The results of this thesis suggest that barriers are still key to understanding socio-economic disparities in divorce risk. Chapter 1 showed how moral and economic barriers are likely to account for a considerable part of the variation in barriers to divorce. Chapter 2 pointed to the possible importance of satisfaction with domains of life, such as leisure time or social life. Both these results suggest that today socio-economic resources are themselves barriers to leaving a relationship rather than that they are needed to overcome them. Divorce is a disruptive event in people's lives (Kalmijn et al., 2007). People who have a lot of resources, who are happy with other domains of life, or who have high social status, are people who have more to lose from such disruptive events than others. Future research could investigate whether it is indeed such calculations that prevent the resourceful from leaving relationships compared to the less resourceful, and which kind of barriers matter.

Chapter 3 identified an additional explanation that could be taken into account for future research. Several findings indicate that processes that reflect a short-term decision-making horizon make couples with high marital satisfaction break up. The absence of barriers might make short-term considerations prevail more compared to long-term considerations. That men leave satisfying relationships when there are many single women available, but do not re-partner faster after divorce, might point to a short-term influence of singles available, that do not lead to sustainable benefits in terms of life satisfaction. Also the finding that especially



agreeable men leave satisfying relationships might indicate a short-term decision-making process. Avoiding conflict might bring benefits in the short-term, but in the long-term the ignoring of relationship problems might prove to be detrimental for relationship stability. These observations seem to fit with a short-term horizon determining individuals' decisions, rather than that benefits in the long-term matter when satisfying relationships break up.

This proposition is further supported by the decreased levels of life satisfaction observed for individuals who left satisfying relationships. It is the presence of high barriers that could prevent short-term considerations to be influential, but once these barriers are lower such considerations become more important. The lower educated seem today to have the lowest barriers to divorce, and might therefore have the fewest obstacles to follow short-term incentives. Future research could investigate whether this proposition is valid.

These suggestions pose interesting questions about how social stratification processes in society can affect socio-economic disparities in divorce risk. Socio-economic inequality is now likely to lead to socio-economic differences in the barriers to divorce. It might be the case that in societies with fewer inequalities, less differences in divorce risk will exist, everything else equal, due to more equal barriers to divorce.

It could be argued, however, that barriers to divorce are undesirable if they prevent people from taking the decisions they would otherwise make in the absence of such constraints. At the same

time, if the suggestion indeed is correct that low barriers make short-term decisions prevail over long-term decision ones, it is debatable whether barriers to divorce are desirable or not. A more neutral approach to the matter would be to look at how social stratification affects the prevalence of short-term decisions made within the family sphere. In more dynamic contexts it is more difficult to make long-term decisions due to the uncertainty about the future.

If the propositions made in this discussion are correct, it can be expected that less short-term decisions are made, and less satisfying relationships will break up in stable environments. In that case, the absence of barriers will not necessarily lead to socio-economic disparities in divorce risk when environments are stable. If social stratification structures that are characterized by high institutionalization stabilize people's environments, it might be that more institutionalization per se can reduce socio-economic disparities in divorce risk. But to reach such conclusions, several of the suggestions made in this discussion have to be empirically verified in future research. It is these recommendations for future research to which I turn now.

### *Future research*

A challenge to future research would be to come to a thorough understanding of how barriers to divorce work, and how this differs by socio-economic position. A few additional questions are of

particular interest. Is it indeed the case that low barriers give a bigger role to short-term incentives in the decision-making process before divorce? Are the patterns found in this thesis particular to Britain or is variation in barriers also driving the negative correlation between socio-economic resources and divorce in other countries? If the latter is the case, what determines how unequally spread barriers are in a society, and does this explain the level of family polarization in those countries?

To first get a thorough understanding of how the decision to divorce is made in a context with low barriers, compared to a situation with high barriers, more qualitative and psychological research might give useful insights for hypotheses that could be tested in larger-N research. The advantage of the large-N approach of this thesis is that it can identify the relevance of certain specific processes. Its limitation is that it cannot really uncover how these processes exactly work. More psychological approaches to relationship dynamics could give insight into how certain types of behaviors within relationships do not affect marital satisfaction, but do affect break-up. For instance, the role of agreeableness could be investigated in more detail through more focused psychological studies.

Another interesting question is whether a large stock of singles in men's marriage markets promotes a more short-term approach to relationship decision-making. To test whether the finding regarding home ownership in Chapter 1 indeed reflects higher economic barriers to divorce, more focused studies could also uncover

whether such considerations indeed take place in the decision-making process. If these processes can be found in more qualitative studies and replicated with large-N studies using other data than those of this thesis, a strong case can be made for the suggestions that have been made in this conclusion.

Studies looking at the role of barriers and marital satisfaction in different contexts could confirm whether the importance of barriers is common to all contexts, or whether different processes underlie the correlation between resources and divorce risk in different countries. If variation in barriers does seem to be the story in these different settings, it would be interesting to investigate what determines this variation in barriers. Is family polarization reduced by more compressed income distributions, housing policies, and less dispersed social status structures? Does institutionalization per se lead to less socio-economic disparities in divorce risk? More in general, institutionalized settings could not only affect the dispersion of barriers, but it could also affect the extent to which decisions are made based on short-term considerations in all domains of life.

Institutionalized settings are normally less dynamic. In a dynamic environment it is harder to make long-term decisions. Low barriers to divorce might therefore not affect divorce risk in the same way in settings that are more institutionalized than Britain. If this appears to be the case, this future avenue of research could also provide important insights for inequality research in general. Can it be that institutionalization per se makes decision-making easier by

providing clear and stable paths to success? And does this reduce socio-economic inequality within society in general?



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