Welfare regimes and fertility in second unions

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Abstract

We examine the differences in the hazard of second union formation and the hazard the first birth in a second union in several countries with different welfare regimes: Sweden, France, Germany, Spain, the United States and Canada. By matching the Harmonized Histories dataset with the Comparative Family Policy database (GGP), we are able to estimate the effect of family-related policies on fertility in second unions. The preliminary results show a similar rate of re-partnering and of having a first birth in a second union throughout countries, although France and Sweden have slightly higher rates. These are also the countries with the most stable maternity and parental leaves since the 60's, while Canada, Germany, and Spain have stable maternity and parental leaves only after the '70s.

1. Introduction

Union dissolution, whether of a marriage or an unmarried cohabiting union, has become a frequent event in the family formation process. In theory, breaking up reduces by itself the hazard of the next birth, through reduced exposure to childbearing. However, the beginning of a new union resumes exposure to childbearing and could either alleviate the negative effect of the break up on the hazard or increase it. Nevertheless, other factors than repartnering play a role in this process. Some of these factors belong to the individual and his or her partner: age, number of previous children, education level, employment status, etc. Yet, other factors belong to the institutional context in which people live. Countries have different welfare regimes that may make it easier or more difficult for people to have children, either directly or indirectly.

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We are interested in the role of these differences on the hazard of forming a second union and of the birth of a child after the start of a second union. The general hypothesis is that, *ceteris paribus*, countries which support families (such as Sweden or Canada) or have implemented pronatalist policies (such as France) might make it easier to have the next child after having started a new union than countries which provide little public support to either families or natality such as Germany, Spain or the United States.

We use data from an updated version of the Harmonized Histories (Perelli-Harris, Kreyenfeld, and Kubisch 2010) that includes all the countries we study. The Harmonized Histories data file was created by the Non-Marital Childbearing Network. It harmonizes childbearing and marital histories from 14 countries in the Generations and Gender Program (GGP) with data from Spain (Spanish Fertility Survey), United Kingdom (British Household Panel Study) and United States (National Survey of Family Growth). The version we use includes data from Canada as well. This will allow adding a subnational comparison, as one Canadian province has implemented family policies similar to that of the Nordic countries whereas the rest of the country does not have (Beaujot, Du, and Ravanera 2013).

We also use the Comparative Family Policy database (GGP), which contains information about family cash benefits as well as maternity, parental and childcare leave and benefits covering the period 1960 to 2010. Matching the Harmonized Histories dataset and the Comparative Family Policy database will allow estimating the effect of family-related policies on fertility in second unions.

We thus compare the hazard of forming a second union and then the hazard of a birth in a second union in Sweden, France, Germany, Spain, the United States, Quebec and the rest of Canada, using discrete-time Poisson models with multiple clocks, and estimate the effect of family policies on this hazard by including them in the models as time-varying independent variables.

2. Background

In this section, we analyze first the different type of welfare state regimes, the varying conceptions of the family as they are historically embedded in religious and legal institutions, and how these different conceptions determine the duties of family members towards each other, as well as the role of the state towards the family. Also, we cover the relationships between the welfare state and

fertility. In the second part of the section, we focus on the relationship between union dissolution and fertility, as well as on the factors that may motivate or hinder fertility in higher order unions and in step-families.

2.1 Welfare State Regimes, the Family and Fertility

G. Esping-Andersen published *The Three Worlds of Welfare Capitalism* in 1990. The book provides an analysis of the way welfare is provided in capitalist countries, with a focus on the Western developed world, and a typology of these countries based on how welfare is provided in each. The analysis focuses on the sources of welfare in each country —the market, the family and the state— and the typology groups countries according to their main source of welfare. The three worlds are 'liberal' countries, in which market is the main source of welfare, the 'corporatist-statist' ones, in which welfare is provided with respect to family ties through state-sponsored institutions, and the 'social-democratic' ones, in which the state plays a central role in the organization of the access to welfare, and welfare is provided as directly as possible to the individual irrespective of their family ties.

In liberal countries, people are expected to get access to welfare through the market. Income comes primarily, if not solely, from employment. Accommodation and services such as daycare and much of education are bought on the market using earnings; health is typically provided by the employer as health insurance obtained from private insurance companies, a large fraction of health providers being for-profit corporations.

In corporatist-statist countries, at least in theory, family members get access to welfare mainly through the employment of the father who is expected to provide for his wife and children with his wages but also with the benefits, typically state regulated, attached to his job. Education and health are provided by state regulated organizations, access to health services is often provided through mechanisms linked to the father's employment. Retirement is typically state funded and the retirement income of the wife is linked to that of her husband. Such countries are, or were for long, associated with the breadwinner and homemaker model of gender roles. Until recently, they typically provided little support to working mothers and actually discouraged mothers' work, notably by not providing public daycare, while implementing schooling half a day in a way that made the mother needed at home. These countries also based income tax on the couple's income

in a system of progressive tax rates so that the 'supplementary' income brought by the working mother was taxed at a highly marginal rate.

In social democratic countries, people are expected to get access to welfare from paid employment, but also from state-provided services. Health, education, kindergarten, daycare centers, retirement homes, pension plans, etc. are paid for a by the collectivity, and made available to each individual directly and not through their relation to family members the way they are in corporatist-statist countries and, to a certain extent, in liberal ones. Access to these elements of welfare do not depend on family ties and neither simply on the capacity to get them from the market. People may buy their home or rent on the private market, but in Sweden, for instance, a large fraction of rented accommodations belong to the state or cooperatives and people who rent on the private market are grouped into unions that negotiate rents with owners or owners associations. Using Esping-Andersen's terminology, in the social-democratic welfare regime, and unlike in the liberal one, many of the goods and services that provide welfare are decommodified.

There are some differences among the countries that belong within each type of welfare regime that have not been stressed by Esping-Andersen, but they are important in other to fully understand the typology, and they are relevant for our purpose.

The most typical members of the corporatist-statist type are European continental countries in which the Catholic Church has been prominent: Germany, Austria, and Belgium. One of the consequences of this prominence is the role given to the social doctrine of the Church on the family and its relation to the state and to private property as they are developed in the *Rerum Novarum* encyclical. The state must respect the traditional family, especially the division of labor within the family, the woman being a mother and the father a provider, and thus must adopt policies that support the traditional family and refrain from having ones that might disturb it. The state and employers must act in a paternalistic way towards citizens and workers. Such views fit well with the corporatist conception, which is not a surprise since the encyclical was basically an endorsement of Bismarck's reforms and a condemnation of anything related with Marxism.

Another relevant feature is that typical corporatist-statist countries are also countries whose private law is based on civil law. The relevant feature is that the typical civil code will include provisions that organize the economic relations among family members. In these matters, despite numerous superficial similarities, civil law and common law truly belong to two different worlds.

Put bluntly, common law appears primarily as a 'system of remedies'. Civil law, on the contrary and especially regarding family matters, is primarily a system that organizes. In civil law, traditionally, the obligation to maintain children is a civil effect of marriage that is a direct consequence of it: it begins with the solemnization of marriage, not its breakdown. The same is true for the maintenance of the wife or, in more modern formulation, to the mutual provision of maintenance between spouses. Typically, civil law also enforces maintenance across generations through descent, between parents and children and between grandparents and grandchildren, all in a reciprocal way. France even added to this an intergenerational maintenance obligation based on marriage rather than descent: in some circumstances, the son-in-law may have to provide for his mother-in-law. In common law, the husband must provide for his wife, but has no duty towards his children and no one has a maintenance duty for their kin. Typically, in common law jurisdictions, maintenance duties are dealt with in a Divorce Act. Also, still in common law jurisdictions —and thus in countries which belong to the liberal welfare regime type—, duties similar to that imposed by civil law were introduced by the Poor Laws, written by royal jurists trained in Roman law, and are still found in contemporary social welfare legislation. Next of kin are not bound to provide for each other directly, but whether as a consequence of separation or divorce, or because they are expected to refund the state if their relatives need welfare. Duties are triggered by specific events —divorce, benefits claim—, rather than being an explicit, direct and preexisting consequence of marriage and, traditionally, legitimate births.

Even limiting the scope to Western Europe, many countries do not fit well in the original typology which had to be modified to accommodate a difference within the "corporatist-statist" type and split it into two subtypes, Northern and Southern "corporatist-statist" regimes, the Northern subtype including countries such as Germany, Austria and Belgium and the Southern subtype, countries such as Portugal, Spain and Italy. The main difference between the two subgroups is the level of provision of welfare by the state and state-regulated schemes: Northern countries have a relatively high level of these that can be historically linked to the influence of Bismarck, whereas Southern ones have a low level because they never implemented the kind of paternalistic and corporatist welfare system developed in 19th century Germany. Thus, even today, people are more dependent on their kin —typically children on their parents until they can afford to leave home, parents on their children in their old age— in countries of the Southern subtype than in countries of the Northern subtype.

France does not fit in the typology. The use of civil law and the long establishment of the Catholic Church should have made it a member of the corporatist-statist group, but it developed its welfare system far from the influences of the Church and Germany. The first social policies were theoretically justified as a generalization to the entire community of the 'family solidarity' enshrined in the maintenance duties of the Civil Code. The further development of the French welfare regime was steered by a form of syndicalism which relied much more on Marxism than on legal thought. Today still, most elements of the French social security system are managed by non-governmental organizations headed by representatives from employers and unions. Besides, the legacy of mercantilism and the early awareness of fertility decline in the context of late 19th century European tensions fostered the development of pronatalist policies that were later adjusted to accommodate women's incorporation into the labor force without the ideological curb of the social doctrine of the Church. On the contrary, children's schooling, kindergarten and daycare provision are used to allow women to work, and income tax is designed in a way that fosters women's paid employment rather than discouraging it.

The origin of the Swedish social-democratic model can be found in an influential report on the population of Sweden in the 1930s in which fertility decline was viewed as the consequence of industrialization and urbanization. In rural areas, families typically owned their farm and produced a large fraction of their food. Children could be included in the family work force at an early age, and thus the birth of a new child had no negative economic consequence for the family. With industrialization and urbanization, accommodation and food have to be bought and paid for, children became sources of expenses, and one additional child was a new source of expense: as a consequence, people had fewer children, and thus fertility declined. In a nutshell, this is Caldwell's (1976) wealth flows theory, but forty years earlier. The report discarded immigration as a way to avoid population decline as climate and language were strong barriers and thus pointed to fostering fertility as the only realistic way to maintain or increase the size of the population. Policies should be based on the assumption that in the new setting, couples refrain from having as many children as they want because of their cost. Policies should thus lower the cost of raising a child, which translated first as the free provision of education and health services for children. From the start, what would become the social-democratic welfare regime tackled fertility decline by investing in the provision of services rather than by transferring money, as in a traditional pronatalist system. The model further developed over the decades with a large influence from a strand of feminism

focused on women's economic independence as much as gender equality which led to the extension of the provision of public services, the creation of public sector jobs especially for women who provided these services, and policies fostering the balance between work and family, but with a twist that favors the equalization of gender roles such as paternity leaves basically on par with maternity leaves. Freeing the individual from economic rights and obligations towards kin is seen as an achievement of the model. In the early 1970s, all forms of maintenance duties between kin were abolished except from parents to children until 18 or 21 if still in school. In the early 1980s, pension payments to the surviving spouse were abolished for couples not already married, this sending the clear sign that everyone is expected to work, women and men alike.

Although this is not usually discussed, the peculiar relation between Church and State in Sweden is likely to have played a role in the development of the Swedish social-democratic welfare regime which is firmly grounded on principles that run against the traditional teachings of Christian churches, especially but not only concerning gender roles within the family. The Church of Sweden is Lutheran and remained Sweden's established church until 2000. Unlike the Church of England which can rightly be viewed at "arm's length" from secular authorities, the Church of Sweden has long been seen by the secular authority, if not as a branch of the executive, certainly as a body submitted to its authority. Divorce law has long been lenient in Sweden. Divorce had been introduced by the Reformation and was first granted by ecclesiastical courts. However, administrative divorce, i.e. divorce granted after a petition to the King rather than to the Church court, had been available since at least 1734. By the time of the 1915–1920 reform, divorce was granted by secular courts, but proclaimed by the local bishop who had no choice but to comply with the secular court decision. The 1915–1920 reform made divorce even easier and was passed despite opposition from the Church. Women got the right to be ordained priest in the Church of Sweden in 1958 and, since then, the Church has become a progressive rather than a conservative element of the Swedish social and political system. Eva Brunne, bishop of Stockholm since 2009, lives in a registered partnership with another woman – an ordained priest of the Church of Sweden- with whom she has a common child. She is probably the most stunning image of the progressivism of the Swedish national church. The fact that more than half the population of Sweden belongs to the national church and that several decades ago, the Church gave power to the faithful by having the members of its hierarchy elected by all who belong to the Church rather than by a restricted

electoral college might help understand how it became a progressive rather than a conservative force.

Welfare regimes embody more extensive institutional differences than what is usually understood, many of which are directly or indirectly related to fertility through channels that are related to the notion of the family that underpins each of them.

What became the social-democratic regime first began with an economic analysis of fertility decline; it was developed with the explicit intent of helping couples to have the number of children they desired but could not readily afford to have given the new economy of the beginning of the 20th century. It focused first on providing services such as health and education in order to reduce the direct cost of children. It soon focused on the achievement of full employment and the development of high-wage policies that provided families with secure and relatively high income. The society had little or no ideological bend against women's work or working mothers, and actually came to favor them with the ascent of feminism. The welfare regime soon added policies to support working women, and thus the double-career and double-income family. It later included care for older people and other individuals who cannot support or care for themselves, thus reducing the need for support by kin and especially by women. Maintenance duties are limited, and alimony for the former spouse are a rare occurrence. The implementation of the clean break doctrine is based on the general conception of the family and the fact that women are truly able to maintain themselves and take on their share of child maintenance after separation or divorce. Consequently, fertility-wise, there should be little institutionally induced difference between the first and subsequent unions in a social-democratic welfare regime: a large fraction of the cost of the next child is paid for by the community; maintenance payments for a non-residing child from a former union, whether paid or received, amount to each parent's share of the costs of a residing child; the former spouse is not a liability for the step-family budget and starting a new family does not involve the prospect of a new future liability.

The French welfare regime is idiosyncratic and lacks the theoretical coherence of the social-democratic one. It involves more direct and indirect cash transfers to families than the former. French family law took longer to put an end to alimony to the former spouse, but the current lump sum substitute to alimony is still a form of liability. That said, fertility-wise, pronatalist policies, the number of public services aimed at supporting working mothers, the explicit support of double-

career and double-income families, and the public provision of health and education, despite their complexity, seem to limit institutionally induced differences between the first and subsequent unions more or less to the same extent as in the social-democratic regime.

Unlike the social-democratic and the French ones, the theoretical grounds of the liberal welfare state regime do not include explicit references to fertility. There is no interest in fostering fertility, having children or not being deemed a personal decision in which the state should not intervene. The provision of public services varies across countries. Among the liberal countries, the United States stands out as the one that offers the most limited array of public services: primary and secondary education, health care for senior citizens and those most in need, and a basic retirement scheme. The liberal regime has no ideological barrier to women's work but does not favor it explicitly either. School hours and income tax rules are not used to discourage women from working, but, especially in the United States, daycare, health services for children, and sometimes education must be paid for by the family. In the United States, private law is primarily under the jurisdiction of the states rather than of the federation and thus differs across states. This is especially true for family law, as some states inherited parts of the rules of civil law from former Spanish colonization, other states modified the rules of common law on marital property in different ways, and divorce law and alimony rules vary across states. Because of this diversity, there is no way to sum up what the effect of private law may be on fertility in subsequent unions, except that alimony to a former spouse do exist and that forming a new family may induce future liabilities and might thus have a deterrent effect.

The corporatist-statist regime shares with the social-democratic and French ones an explicit interest in the family, but not on fertility as such. The importance of the family is rooted in the social doctrine of the Church, not in a secular view of the importance of population renewal. Fertility is not central; it is rather assumed that by supporting the traditional family —actually, the breadwinner and homemaker model typical of the industrialized and urbanized age—, people would marry and have children. Plummeting fertility in corporatist-statist countries shows this assumption does not hold anymore. The lack of support and the actual barriers to working mothers when women are educated and want to be economically independent is now viewed as impairing fertility. Furthermore, the institutional support given to breadwinner and house maker families long placed women in a situation in which they were not able to support themselves and take part in the maintenance of their children after a separation or a divorce. This placed the burden of the

maintenance of the former spouse and the children entirely on the father. This pattern, typical of the former West Germany, turns forming a new family in a huge potential liability and should discourage fertility in subsequent unions.

2.2 The Relationships Between Fertility and Union Dissolution

The first studies about fertility after the end of the first union can be traced to the time when divorce became a regular event in the life course -rather than a rare and exceptional event-, in the years following the changes in legislation that lifted restrictions on divorce. Authors writing at this time considered that union dissolution could only have a negative effect on fertility, as it was an event that put an end to the only conceivable state in which a woman could bear children (Bongaarts 1987; Davis and Blake 1956). Non-marital fertility was considered a different and particular subject that was not covered by studies of fertility. Nowadays, authors accept that childbearing can happen in a variety of situations, from lone motherhood to childbearing in blended families with half-siblings on both the father's and the mother's sides. Each of these situations could be a state in the life course of individuals, and each of these states can contribute to fertility with a particular intensity and calendar. Union dissolutions are considered such common-place events that they no longer necessarily truncate reproductive life and may even have a positive effect on women's cumulated fertility (van Bavel, Jansen, and Wijckmans 2012; Beaujouan and Solaz 2007; Buber and Prskawetz 2000; De Graaf and Kalmijn 2003; Jefferies et al. 2000; Leone and Hinde 2007; Manlove et al. 2012; Di Nallo 2016; Prskawetz et al. 2003; Thomson 2004; Thomson and Holland 2015; Thomson and Li 2002; Vikat, Thomson, and Prskawetz 2004).

Recent studies examining the relationships between union dissolution, the formation of new unions and fertility have been conducted primarily in Europe and have mainly focused on the determinants of the intensity and timing of fertility in second unions (van Bavel, Jansen, and Wijckmans 2012; Beaujouan and Solaz 2007; Beaujouan and Wiles 2011; Buber and Prskawetz 2000; De Graaf and Kalmijn 2003; Jefferies et al. 2000; Leone and Hinde 2007; Manlove et al. 2012; Di Nallo 2016; Prskawetz et al. 2003; Thomson 2004; Thomson and Holland 2015; Thomson and Li 2002; Vanassche et al. 2015; Vikat, Thomson, and Prskawetz 2004). A common concern of these studies is whether the number of children born in a new union may compensate for fertility lost during periods of separation. In fact, recent studies in Europe and the United States have shown that an increasing proportion of parents in younger cohorts have children with several partners in

order to accomplish their fertility intentions that got cut short when the first union ended (Di Nallo 2016).

Historically, demography has conceptualized marriage as one of the proximate determinants of fertility (Bongaarts 1987; Davis and Blake 1956). The percentage of married women was interpreted as an indicator of exposure to the risk of procreation, given that the majority of the population would experience reproduction within the framework of stable and legalized marital relations. Separations were therefore seen as a factor that reduces the risk of exposure to pregnancy. Increased conjugal instability would necessarily be associated with a decline in fertility (Leone 2002; Leone and Hinde 2007). Besides, from a normative perspective, stable marital relationships were considered the optimal context for having and raising children (Thomson et al. 2012; Leone and Hinde 2007; Leone 2002).

The increase of conjugal separations in the 1960s and 1970s in developed countries prompted a series of studies about the effect of union dissolution on fertility. This research highlighted the negative association of union dissolutions and fertility (Cohen and Sweet 1974; Downing and Yaukey 1979; Ebanks, George, and Nobbe 1974; Lauriat 1969; Thornton 1978). Lauriat (1969), for example, found evidence of such a negative effect on total fertility using U.S. census data, primarily among separated women who did not remarry and widows. According to this study, women who repartnered only achieved 79% of the fertility of women who remained in their first union. However, the effect varied by ethnic origins, age at the time of the survey, age at first union, and time since separation from the first union (Lauriat 1969). Thornton (1978) compared fertility among U.S. women whose first union ended and among those whose union did not end, using data from 1965-1970 National Fertility Studies. This study established that both marital conflict and marital dissolution affect reproductive behavior. It showed that women who separate "lose" fertility in the years immediately following separation if there is no remarriage, and that this reduction is maintained either until they reach the end of their fertile period or until they form a new union. In that sense, union dissolution implied a truncated childbearing trajectory. However, when women do enter a new union, they are able to make up for the childbearing lost between unions (Thornton 1978). In another study, Cohen & Sweet (1974) studied the effect of marital dissolution and second unions on fertility among U.S. women aged 25 to 54 in 1965. They found that the cumulated fertility of women who dissolved their first union was lower by 0.6 children than that of those who stayed in their first union. Nevertheless, when exposure time within a union was controlled for, the

differences among women who experienced union dissolution and those who did not only reached 0.1 children (Cohen and Sweet 1974).

Since the mid-2000s, a new series of studies about the relationship between union dissolution and fertility emerged. They suggest that the relationship between union instability and fertility is not univocal, and the evidence is not conclusive either concerning the sign of the relationship or the direction of causality between dissolution and fertility. A common concern of these studies is to analyze whether, at the time of the interview, the number of children born to post-dissolution unions may compensate or recover the fertility lost as a result of time spent outside of a union following a breakup (Creighton et al. 2013; Rijken and Thomson 2011; Thomson et al. 2009). On one end, some studies found that union dissolution reduced cumulated fertility among women. For example, in Italy women who dissolve their first union and do not repartner have 27% less cumulated fertility than those who are still in their first union, and 14% less than those who repartnered (Meggiolaro and Ongaro 2010). Other studies showed that union dissolution does not have an effect on fertility and that the intensity of fertility in post-dissolution unions is similar to that of women who have been in a union only once, since women may hurry childbearing in the new union, as sterility increases with age (Beaujouan and Solaz 2007). For example, a study by Spijker, Simó, and Solsona (2012), which compared ten European countries, found that women who formed second or higher order unions had similar fertility intensity than those who had not dissolved their first union, in part because narrower child spacing compensated the time lost in the union dissolution process (Spijker, Simó, and Solsona 2012). Lastly, another group of studies showcase how the effect of union dissolution on fertility depends on the ages at which conjugal and reproductive history events occur (van Bavel, Jansen, and Wijckmans 2012; Jansen, Wijckmans, and van Bavel 2008). For example, populations with patterns of early dissolution and a strong prevalence of second unions produce more births in stepfamilies than populations in which these processes occur at later ages; in this scenario, a high prevalence of union dissolution does not necessarily entail a depressing effect on fertility (Leone and Hinde 2007; Thomson et al. 2009).

2.3 Fertility Post-Dissolution

Recent research on post-dissolution fertility has focused on parenthood in step families and on multiple-partner-fertility (MPF) (Guzzo 2014; Guzzo and Dorius 2016; Henz and Thomson 2005; Holland and Thomson 2011; Lappegård and Thomson 2018; Li 2006; Manlove et al. 2008; Di

Nallo 2016, 2018; Petren 2016; Sweeney 2010; Thomson et al. 2002; Thomson and Li 2002; Toulemon and Knudsen 2006; Vikat, Thomson, and Hoem 1999; Vikat, Thomson, and Prskawetz 2004).

MPF studies consider the relationship between having children and the formation, dissolution and formation of new unions. MPF is the result of a set of behaviors that occur sequentially: having a partner, having a child, separating, having a new partner, and childbearing with the new partner (Guzzo and Dorius 2016; Di Nallo 2016). The timing of conjugal transitions and births are important determinants of MPF. Younger individuals have longer exposure to having several relationships and thus greater exposure to having children in different unions (Guzzo and Dorius 2016; Manlove et al. 2008). Particularly, there is a negative relationship between age at the dissolution of the first union and the likelihood of repartnering; age at dissolution is one of the strongest predictors of post-dissolution union entry (van Bavel, Jansen, and Wijckmans 2012; Beaujouan and Wiles 2011; Gałęzewska, Perelli-Harris, and Berrington 2017; Jansen, Wijckmans, and van Bavel 2008; Lampard and Peggs 1999; Meggiolaro and Ongaro 2010; Sweeney 1997) As age at dissolution increases, the chances of forming a new union decrease because men tend to form unions with younger women. A later age at the dissolution also means a higher probability of having had children in the first union, in such a way that the two factors combined –older ages at union dissolution, having children from previous unions- decrease the chances of having a new partner (van Bavel, Jansen, and Wijckmans 2012; Brown 2000; Prskawetz et al. 2003; Wu and Schimmele 2005).Age at birth of the first child is also a determining factor of MPF, since an early onset of maternity/paternity increases the risk of having children with different partners (Guzzo and Dorius 2016; Manlove et al. 2008).

Parenthood in step families (blended families) has received increasing attention over the past decades in developed countries. Particularly, studies have focused on how the presence of children from previous unions may affect childbearing in this kind of family (Sweeney 2010).

The presence of children from previous unions negatively affects the probability of repartnering, and thus, in turn, also affects the fertility of women in step families (Di Nallo 2018; Spijker, Simó, and Solsona 2012; Stewart 2002). However, ion average, women in step-families tend to achieve the same fertility as those who remain in their first union, since they shorten the interval between pregnancies so as to either compensate for the time lost through the dissolution

of the first union or to avoid big age differences between siblings (Allen Li 2006; Spijker, Simó, and Solsona 2012; Thomson and Li 2002). The effects of previous children on further childbearing in new unions are gendered, and moreover, depend on the age of the children and the type of parental custody arrangement (De Graaf and Kalmijn 2003; Griffith, Koo, and Suchindran 1985; Di Nallo 2018; Pasteeles and Mortelmans 2015; Sweeney 1997; Wu and Schimmele 2005) Among men, living with children from a previous union significantly increases the likelihood of re-entering a union with a partner who also has children from a previous union (Goldscheider and Sassler 2006). However, having co-resident children decreases the probability of repartnering among women except in the case of repartnering with men who are already fathers (Goldscheider and Sassler 2006).Studies have shown that shared-custody arrangements increase the likelihood of forming a new union and that mothers with sole and full-time custody of their children have the lowest probability of repartnering (Beaujouan 2012; Goldscheider and Sassler 2006; Pasteeles and Mortelmans 2015; Vanassche, Corijn, and Matthijs 2015). Furthermore, other studies showed, for the US and several European countries, that birth hazards are higher when the child is the couple's first or second (Thomson 2004). This casts light on the unique value of first and second shared children among newly formed couples: these children are valued so highly as a way of strengthening the couple's bond that this consideration overcomes concerns about the costs of rearing larger numbers of children in a blended family (Thomson 2004).

There are, indeed, several motivations for couples in second or higher order unions for having children; Thomson et al. (2002) distinguish three main motivations. On the one hand, there is the "commitment effect," which leads to having a child with the new partner in order to strengthen the commitment between the partners of the new union. Then there is the "sibling effect" by which individuals who already have a child want to give them siblings born in the new union. Lastly, there is the "parent status effect" among individuals who want to have at least one child and have not done so in the previous union (Thomson et al. 2002). The emergence of step and blended families as a result of union dissolution is leading to the expansion of family networks as well as their increased complexity, resulting in some uncertainty regarding roles, relationships and responsibilities towards children (Cherlin 1978; Fomby 2016; McLanahan and Beck 2010).

Lastly, the relationship between union dissolution and fertility is mediated by educational attainment. Whether education has a positive or a negative effect on fertility in second unions seems to vary according to the welfare regime of the country. While in some countries (such as Germany)

there is a negative gradient in having a second child in a new union, in other countries (such as Finland) there is a positive gradient: the highly educated have a higher chance of having a second birth in a new union than those with lower educational attainment (Kreyenfeld et al. 2017).

To sum up, the relationship between union dissolution and fertility is not univocal and separations may not necessarily have a negative effect on fertility. Two opposing forces are present in a context of increased conjugal instability: on the one hand, the period of exposure to fertility over the life course could be reduced, but on the other hand, the risk of forming new unions in which the desire to have children may be present, increases (Beaujouan and Solaz 2007; Buber and Prskawetz 2000; Leone and Hinde 2007; Persson and Tollebrant 2013; Spijker, Simó, and Solsona 2012; Thomson et al. 2002; Toulemon and Knudsen 2006). As a result, it becomes more frequent to have children in a variety of conjugal situations (outside of union, in a single union or in several unions, etc.). This new context implies that union dissolution may have effects on reproductive behavior and make it more likely to have children with more than one partner. The fertility process should be studied like a succession of conjugal and family stages; as increasingly larger numbers of individuals have several unions across their life course. The rise in union instability contributes to an increase in the number of individuals who spend periods of time outside of union. When unions end earlier in the life course, the number of people at risk of forming subsequent unions increases as well as the potential number of births occurring in such unions.

3. Hypotheses

We are primarily interested in the effects of the different elements that constitute welfare regimes on the hazard of a birth in a second union. However, this event cannot occur before other relevant events such as the formation of the first union, the end of the first union and the beginning of the second union. The institutional setting may influence the processes that lead to the first birth in the second union. Analyzing the process that governs each of these events is a large endeavor that is obviously beyond the scope of a single paper. Nevertheless, given the importance of the formation of the second union for the occurrence of a first birth within it, we do analyze the formation of the second union.

Our general hypothesis is that policies that diminish the cost of having a child will favor the occurrence of a birth in the second union. However, this is not a straightforward hypothesis, since

such policies could favor a competing risk, that of having a child after the end of the first union without first entering into a new union.

The assumptions that underlie our hypothesis are:

1. Childbearing in second unions mitigates the depressing effect of the dissolution of the first union on fertility. This, in turn, might prevent societies from falling into lowest low fertility levels.

2. The type of welfare regime -particularly regarding maternal and parental leaves as well as financial transfers- affects the compensating effect of childbearing in second unions on fertility, since the cost of having children for families varies according to the presence and type of such policies.

3. Thus, family policies that reduce the cost of having a child in a second union might lessen the depressing effect of first union dissolution on fertility.

We operationalize these policies in several ways. The simplest one is the presence or absence of a given policy in a given country at any time the woman is at risk of entering the second union and at any time she is at risk of having a child while in the second union. A more complex operationalization uses the actual value of the policy, either as number of weeks, for maternal and parental leave, or as the amount of benefits expressed as a proportion of average income, in the case of allowances and transfers.

We also test the effect of some relevant elements of private law, namely maintenance payments for the woman after divorce and maintenance payments for the children after separation or divorce. Provisions of private law are tricky to operationalize because their use and value depend on the decision of a court of justice and on the respective resources of the former spouses. However, there are quite systematic differences between jurisdictions in these matters and we operationalize them as qualitative variables. Our general hypothesis is that provisions that reduce maintenance payments once the spouse who receives them enters a new union will reduce both the hazard of entering a new union and that of having a child in a second union.

4. Data and methods

4.1 Data

We use data from the Harmonized Histories which harmonizes childbearing and marital histories for several countries. We also use data from the 2006 General Social Survey for Canada (Statistics Canada), that was harmonized so as to contain the same variables as the Harmonized Histories dataset. This data contains the dependent variables (time to a second union and time to a birth in a second union) as well as independent variables at the individual level (age, education, parity) and the partner level. Our sample is composed of women aged between 25 and 49 years old at the time of the survey.

The countries and waves selected from the Harmonized histories are as follows: France, GGS wave1, year 2005 (n= 10,079); Germany, GGS wave1, year 2005 (n=10,017); Spain, Spanish Fertility Survey, year 2006 (n= 9,737), Sweden GGS wave 1, year 2012-13 (n=9,688), USA, National Survey of Family Growth, year 2007 (n=13,495) and for Canada, General Social Survey, year 2006 (n=9,390).

We use the Comparative Family Policy database to operationalize the variation over time of family policies in the countries we study. The Comparative Family Policy database actually comprises two datasets: the "Comparative Family Cash Benefits Database" for the period 1960 to 2008, and the "Comparative Maternity, Parental, and Childcare Leave and Benefits Database" for the period 1960-2010. For each year throughout the period they cover, these datasets contain information about family policy such as weeks of paid maternity and paternity leave and cash allowances for births, that will be added to our models, as explained below.

We matched both dataset to analyze the effect of family-related policies on the repartnering after first union and on the fertility in second unions.

4.2. Methods

The Harmonized histories database provides time to event information in months. We will assess the effect of family policies on the hazard of having the next child after the end of the first union by comparing nested equations using Poisson regression with 'multiple clocks'.

We analyze two events: the formation of the second union and the occurrence of a birth in the second union. We analyze the two events in a similar fashion. We assess the effect of family policies on the occurrence of each event by comparing nested equations.

For each event, all equations include all relevant spells from all countries. For each event, there is one spell per woman: being at risk of forming the second union which starts at the end of the first union and being at risk of having a child within the second union which starts at the beginning of the second union. For the first event, the spell begins at the end of the first union and ends either at the formation of the second union, when the woman reaches 45 or at her age at the time of the survey if she still had not entered a second union. For the second event, the spell begins at the beginning of the second union and ends either at the birth of a child, when the woman reaches 45 or at her age at the time of the survey if there is no birth.

For each event, the first equation, the "most" restricted model, includes relevant and available characteristics of the woman and her spouse or partner, as time-varying variables if relevant, and the following clocks:

- The base hazard functions: age of the woman for each combination of country and educational level, as a curvilinear function of age. Hazard functions are estimated for each combination of country and educational level since previous studies. Kreyenfeld et al. (2017) have shown that in some countries there is a negative gradient in the risk of having a second child in a new union, while in others there is a positive gradient.
- Time since the birth of the previous child accommodating the difference between having no child, having one child and having at least two. The variable is categorical and thus contains values such "No child yet", "First child is less than one-year-old", "First is one or two years old", …, "Last child is less than one-year-old" and so on.
- Time since the beginning of the new union if any, accommodating the difference between not being yet in a new union, again using a categorical variable.

The second equation, the full model, includes the same variables as the first one, plus a series of categorical variables that convey the existence and modalities of the relevant family policies (weeks of paid maternity and paternity leave, cash benefits for births, etc.) and other relevant elements of the welfare regime in the country of each woman at each and every time she was at

risk. In other words, the existence and modalities of the family policies and other relevant elements of the welfare regime are included in the models as time-varying independent variables.

In nested model parlance, the second model is the full model and the first one, the restricted one. We assess the global effect of family policies on the hazard of forming a second union and on the hazard of having the next child after the end of the first union by comparing these equations using the likelihood ratio test. We assess the effect of each element of the welfare regime using likelihood ratio tests comparing the full model and a restricted model that excludes only one element at a time.

4.2.1. Model

We use a simplified version of a model first proposed by Laplante and Fostik (2017), adapting it for Poisson regression to estimate the effect of a series of characteristics on the on the hazard of an event —the formation of the second union or the birth of a child after the beginning of the second union— among women aged between 15 and 49 years old who ended their first marriage or cohabiting relationship. The hazard is modeled as function of a baseline hazard and of the effects of a series of independent variables among which are the policies we are interested in and other variables known to have an effect on the occurrence of the event. The baseline hazard is a quadratic function of the age of the woman with different parameters for each of three educational levels.

First, we estimate one equation by jurisdiction, using only the baseline hazard and the year. If policies change over time and if policies have an effect, the hazard should vary according to the year. Second, we estimate one equation by jurisdiction using policies rather than year. Third, we estimate one equation by jurisdiction using policies and year; if policies have a net effect, this effect should be significant net of the effect of the year.

We estimate the effect of the policies using two different operationalizations. The first one is simply the presence or absence of a given policy —v.g. paid maternal leave— in a given jurisdiction in a given year; these tests whether the mere existence of the policy has an effect. The second operationalization uses quantitated information about the policy —v.g. the value of the maternity benefits expressed as a proportion of the average women's income and the duration in weeks of

the paid maternity leave— in a given jurisdiction in a given year. This estimates the effect of the quantitative features of the policy.

The most complex equation we estimate for a single jurisdiction may be written as follows,

$$\ln\left[h(t)\right]=\sum_{i=1}^{4}\left(\alpha_{i1}E_i+\alpha_{i2}E_iA+\alpha_{i3}E_iA^2\right)+\sum_{i=1}^{k}\beta_iX(t)_i+\sum_{i=1}^{m}\gamma_iZ_i,$$

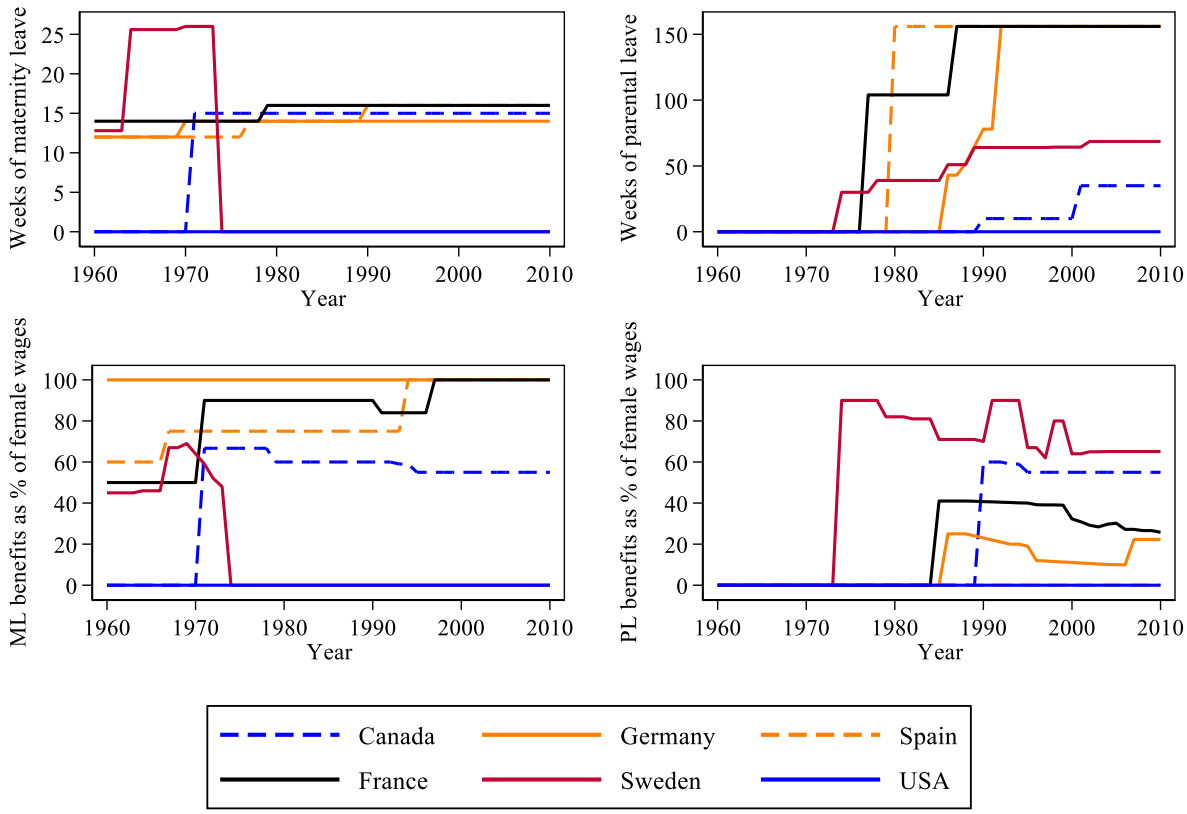
where *h(t)* is the hazard of the event —the formation of the second union or the birth of a child after the beginning of the second union—; E_i stands for a series of binary variables representing the education level of the woman; A is the age of the woman; α_{i1}, α_{i2} and α_{i3} are the three parameters of the curvilinear relationship between the age of the woman and the logarithm of the hazard for women having level of education i; $X(t)$ is either a single time-varying variable representing the year or a series of k variables representing policies either in a binary or a quantitative form; β stands for the effect of each of these variables; Z represents other variables known to have an effect on the occurrence of the event; and γ stands for the effect of each of these variables.

5. Preliminary results

5.1 Family policies between 1960 and 2010

The following figures show the duration of maternity and parental leaves as well as the share of maternity and parental benefits in female wages from 1960 to 2010. These figures will allow us to explore the relationship between family policies and the hazard of having a first birth in a second union.

Figure 1. Duration and values of parental leave, by countries. 1960-2010.



Source: Comparative Family Policy database. (GGP)

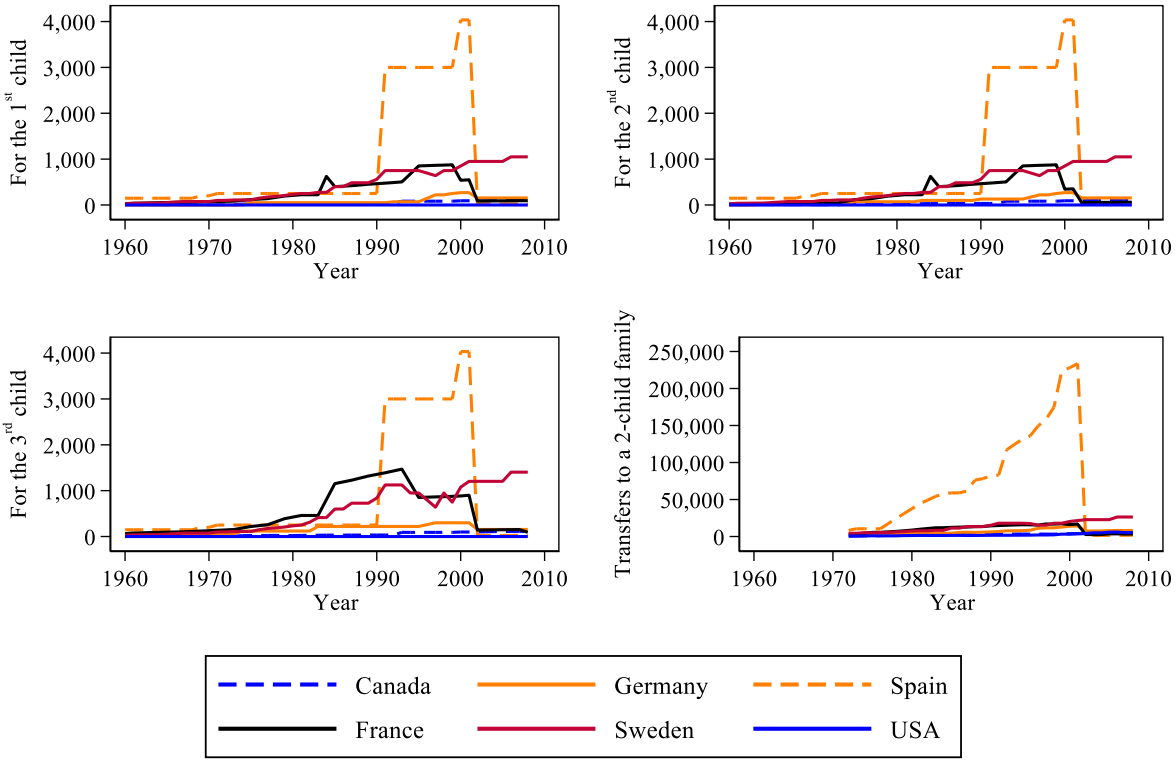
France is the country with the most stable maternity and parental leave over time. Canada, Germany, and Spain increased their maternity and parental leaves in the '70s. Sweden exhibits a higher amount of maternity leave weeks than all countries in the '60s and '70s, when the sharp decrease in maternity leave is concurrent with an increase in parental leave. From then on, in Sweden parental leaves are equivalent for fathers and mothers and who takes them depends on

individual preferences. The United States does not present any weeks of maternity or parental leave between 1970 and 2010.

As for the weight of the benefits of maternity leave as a proportion of women's wages, Germany was the leader in the whole period with a value of benefits equal to the woman's salary. Spain and France follow and converge with the German level from the mid-1990s onwards. Canada has compensation rates of around 60% of the female wages since the 1970s. Finally, Sweden shows a level of compensation rates close to 50% since the '60s, with a fall in the mid-'70s that is compensated by increased parental leave benefits.

Regarding the weight of parental leaves in wages, Sweden has the highest compensation rates of parental leaves, reaching values close to 80% of the salary since the mid-1970s. Canada follows from the '90s, onwards with a compensation rate close to 60% that is stable over time. Finally, Germany and France exhibit compensation rates with values close to 40% and 20%, respectively. United States and Spain do not have parental leaves policies during the period.

Figure 2. Allowances and transfers for the first, the second and the third child, by countries. 1960-2010



Note: Amounts in national currency.

Source: Comparative Family Policy database (GGP).

Finally, in terms of allowances and economical transfers for children, Figure 2 shows that Spain is the country with the highest transfers since the 1990s, for the first, second, and third child. Sweden and France have a similarly growing trend since the 1980s concerning transfers for the first and second children. Nonetheless, France shows a decrease in transfers from the 2000s onwards. The rest of the analyzed countries exhibit low levels of financial transfers to families.

5.2 Timing of Repartnering and First Birth in a Second Unions

Table 1 shows that the selected countries selected have a similar mean age at first union, close to 23 years old, and a median age close to 22 years. However, there are differences among the countries in the rest of the indicators of conjugal life.

The percentage of women aged 25 and 49 years old at the time of the survey whoever separated by age 45 varies from country to country, reaching a maximum of 50.9% in Sweden and a minimum of 12.7% in Spain. Likewise, Spain presents the highest average age at separation from the first union, at 30.2, while in the rest of the countries the mean varies between around 26 and 28 years old.

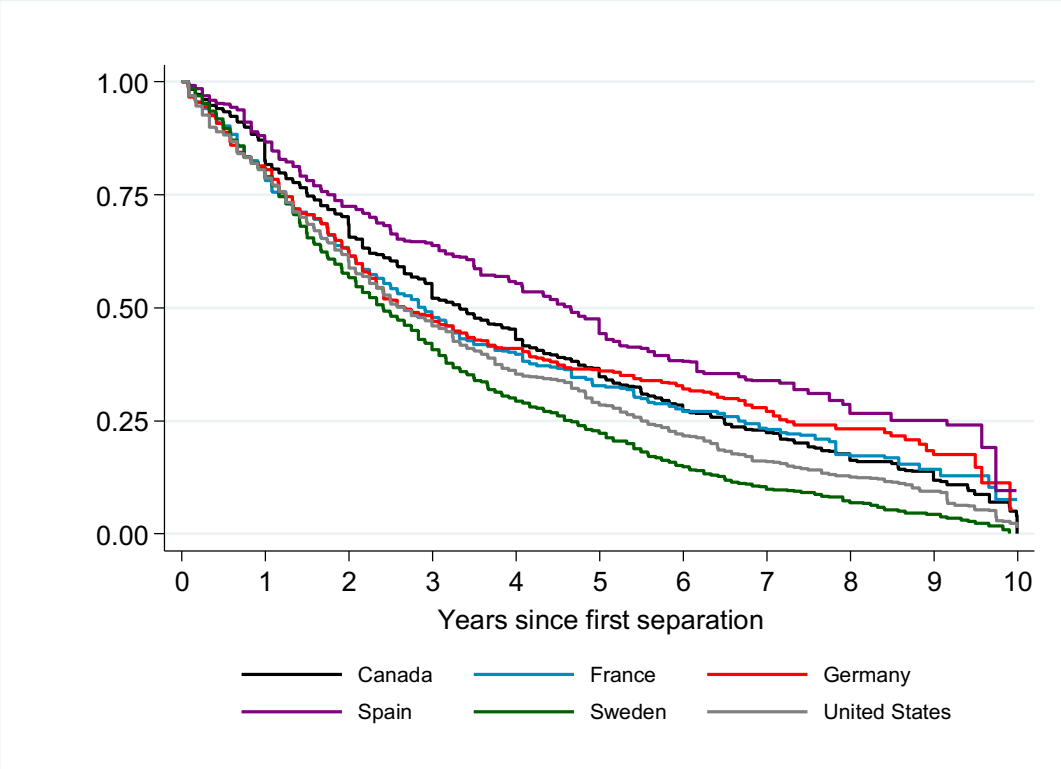
Sweden and the United States stand out from the other countries in that they exhibit the highest percentages of first union dissolution (47.5% and 50.9% respectively), and the lowest mean and median age at first separation among the selected countries, close to 26 and 24 years respectively in both countries. In addition, Sweden and the United States present a particularly high percentage of ever separated women who repartnered by age 45: 81.9% in Sweden and 73.5% in the United States. These countries also exhibit the lowest mean repartnering age, around 27 years old. In all other countries, the percentage of ever separated women who repartnered by the age of 45 vary between 49% and 57%, while the mean age at repartnering among the ever separated oscillates between 28 and 30 years old. Spain again has the lowest share of ever separated women repartnering by age 45 (49.2%) and the highest mean age at repartnering among them (30.4 years).

Table 1. Descriptive statistics about the first union, the first dissolution and repartnering, by countries. Women 25 to 49 years old

	Canada	France	Germany	Spain	Sweden	United States
	2006	**2005**	**2005**	**2006**	**2012-13**	**2007**
First union						
Age at first union						
Mean	23.5	22.4	23.0	24.0	22.2	22.2
Standard deviation	4.6	3.9	4.6	4.5	4.2	4.3
Median	22.9	21.7	22.1	23.8	21.2	21.6
Dissolution of first union						
Percentage ever separated or divorced first union by age 45	33.2	33.0	21.9	12.1	50.9	47.5
Age at first separation or divorce						
Mean	28.1	28.6	27.8	30.2	25.7	25.7
Standard deviation	6.2	6.2	6.4	6.7	5.9	5.5
Median	26.8	27.5	26.5	29.3	24.1	24.5
Time in first union if no dissolution						
Mean	13.1	14.5	14.3	13.2	13.5	11.7
Standard deviation	7.5	7.5	7.5	7.7	7.5	6.3
Median	12.7	14.6	14.4	12.9	13.3	11.3
Time in first union if dissolution						
Mean	6.6	7.1	7.0	7.9	5.1	4.8
Standard deviation	5.8	6.1	6.3	7.1	5.6	4.6
Median	5.0	5.3	4.7	5.9	3.2	3.3
Repartnering						
Percentage ever repartnered before age 45 if first union dissolved	67.1	61.2	59.3	49.2	81.9	73.5
Age at repartnering						
Mean	29.5	29.5	28.5	30.4	27.5	26.8
Standard deviation	6.1	5.9	5.8	6.1	5.7	5.3
Median	28.5	28.7	27.7	29.1	26.2	25.9
Time between separation and repartnering						
Mean	3.2	2.7	2.7	3.5	2.9	2.7
Standard deviation	3.3	3.0	3.2	3.6	2.8	3.0
Median	2.2	1.8	1.8	2.3	2.1	1.8
Cases	9,390	10,079	10,017	9,737	9,688	13,495

Source: Harmonized histories GGP, General Social Survey 2006 –Statistics Canada.

Figure 3. Cumulative percentage of women repartnering after the dissolution of the first union and before age 45, by years since the dissolution of the first union, by countries. Women 25 to 49 years old at the time of the survey



Source: Harmonized histories GGP, General Social Survey 2006 –Statistics Canada.

One year after the end of the first union, around 20% of women aged 25 to 49 at the time of survey will have repartnered in France, Sweden, and the United States. The percentage is slightly lower for Canada, where 16% of women would repartner one-year post-dissolution, and the lowest in Spain, where only 12% will start a second union one year post union break-down.

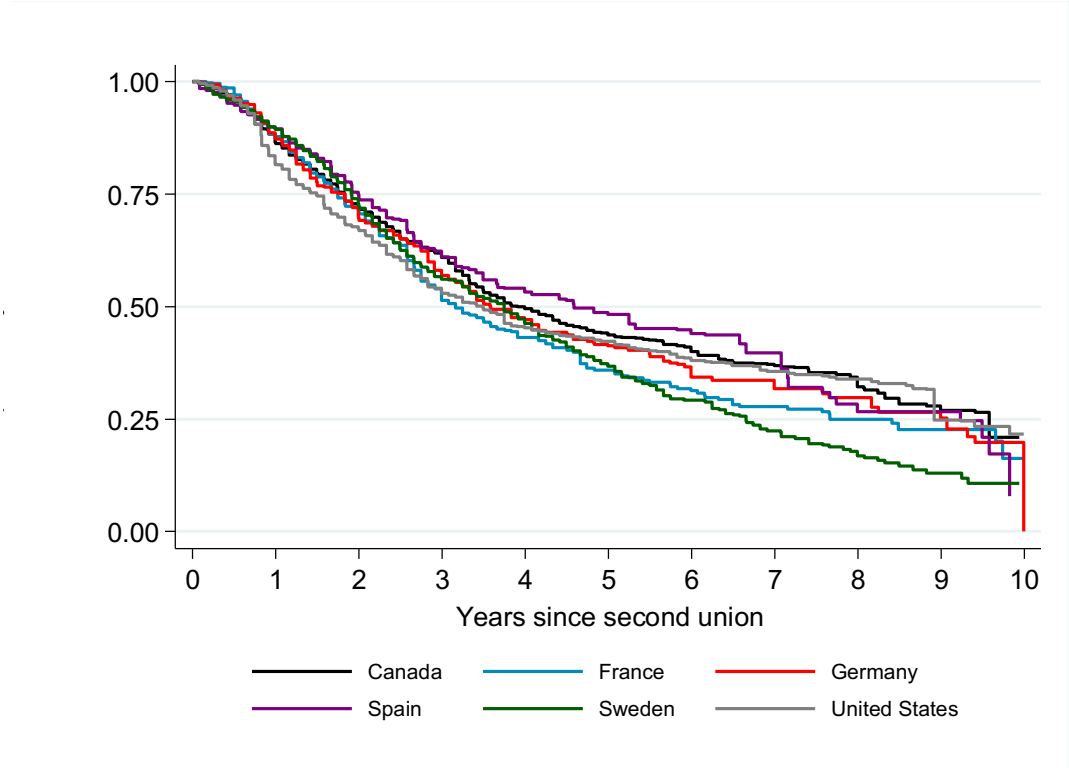
Three years after the first dissolution, about half of women will have repartnered in Canada, France, Germany and the United States. Sweden exhibits the highest rhythm of repartnering; only 44% of women will not have repartnered after three years. Spain, on the contrary, exhibits the slowest rhythm of repartnering: two thirds of women will not repartner within three years.

Within 5 years of the first dissolution, about half the respondents will not have formed a second union in Spain, while this percentage is about 40% in Canada, France and Germany. Only a third of those separated will not have yet formed a second union in the United States, whereas this is the case for only a quarter of Swedish respondents. Ten years after first union dissolution, about a quarter of women in France and Germany, and almost a third of women in Spain, will not have

repartnered yet. This is the case for only 20% of women in Canada, 15% in the United States and 9% in Sweden.

The results for Spain, and to a certain extent those for Germany and France, are consistent with Spijker, Solsona and Simo (2012) using data for several European countries in the 1900s. Several tests show that the differences among curves are actually statistically different only between 8 and 10 years after the dissolution of the first union. The difference among curves are also statistically significant for the period between 7 and 15 years after the dissolution of the first union.

Figure 4. Cumulative percentage of women who have a first birth after reparterning before age 45, by years since the beginning of the second union and country. Women 25 to 49 years old at the time of the survey



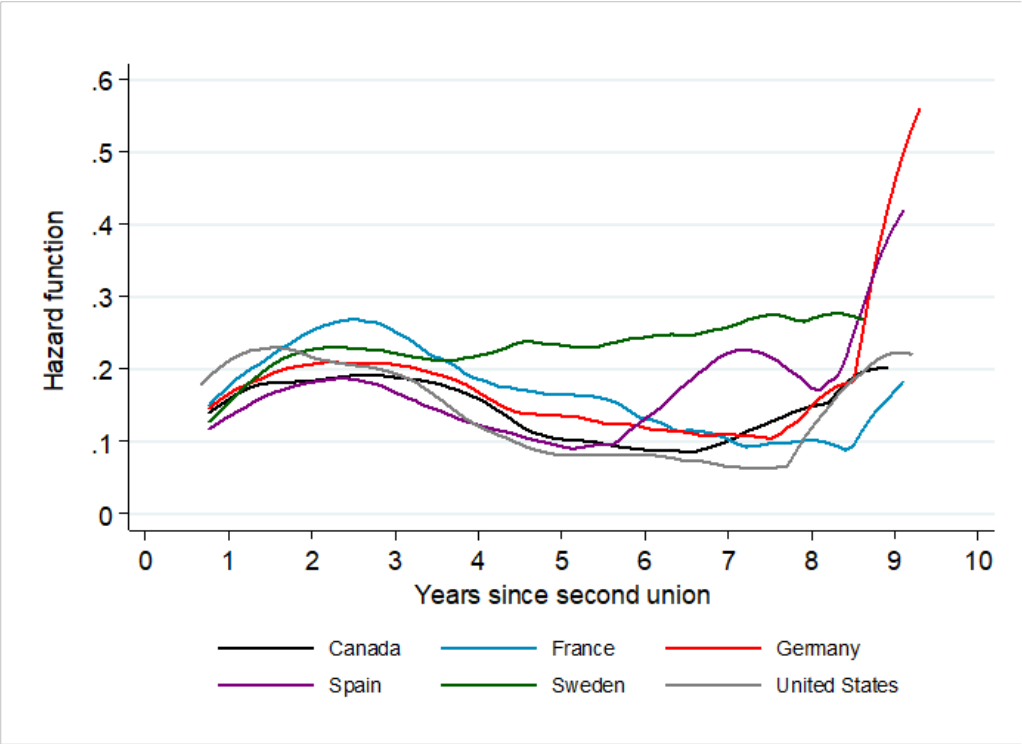
Source: Harmonized histories GGP, General Social Survey 2006 –Statistics Canada

The selected countries present a similar rhythm of first birth of a child after repartnering in a second union, particularly up to three years after the formation of the second union. Differences among countries are not statistically significant up to five years after the formation of the second union. They are, however, significant between five and ten years after the beginning of the second union, and also significant for the period up to ten years after the formation of the second union.

Within five years of the beginning of the second union, about half of repartnered women will have a first child in the new union, this percentage being slightly higher in France and Sweden. After ten years in the second union, about three quarters of women in Sweden will have a first birth in the second union, while this will be the case for about two thirds of women in France, Germany and Spain. Women in Canada and the United States have the slowest transitions to the first birth in the new union, about 40% of them not yet having had a child ten years after repartnering.

Again, results for Spain, Germany and France, are consistent with Spijker, Solsona and Simo (2012) for the 1900s.

Figure 5. Hazard of having a first child in a second union, by years in a second union, and country. Women 25 to 49 years old at the time of the survey

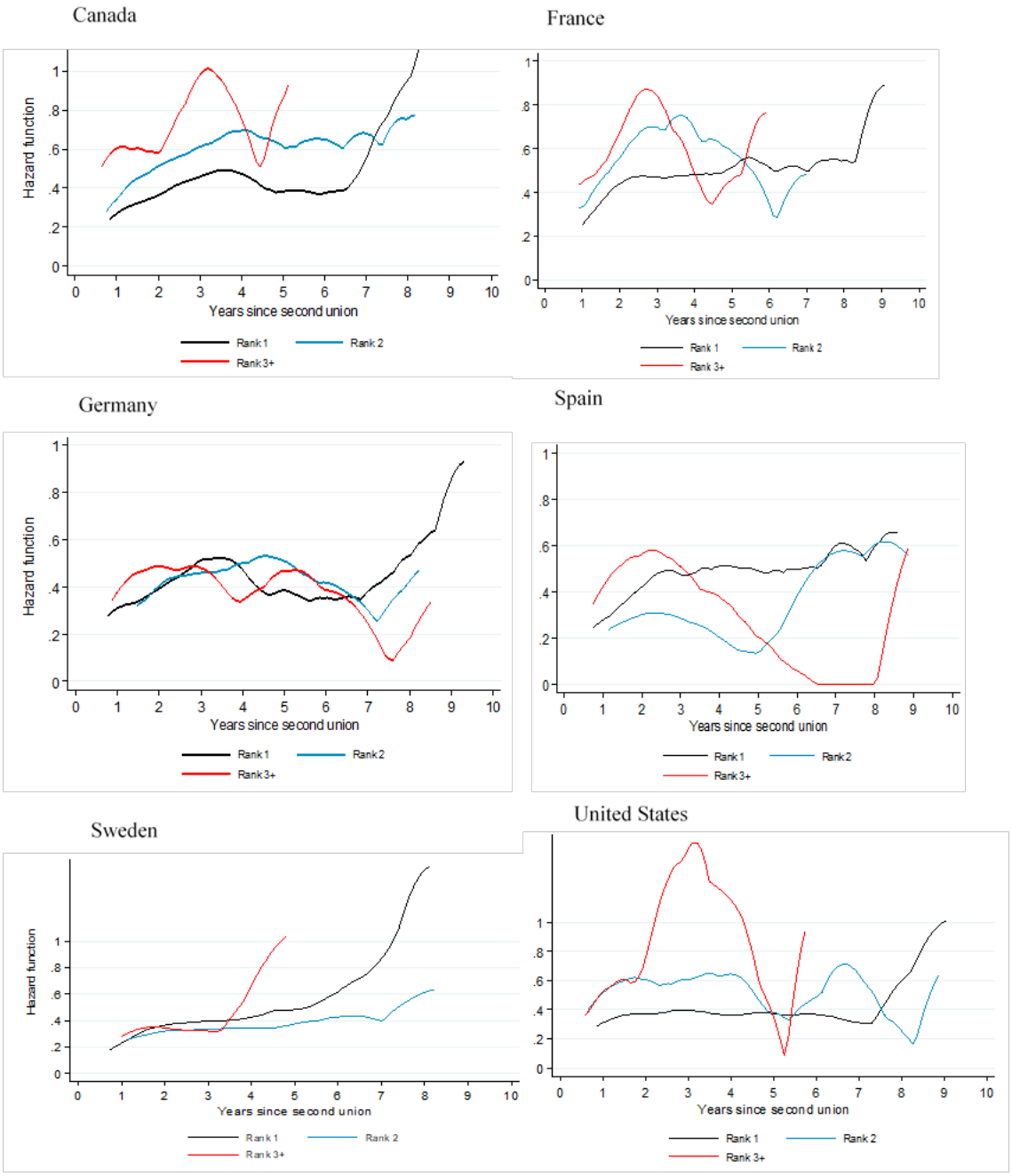


Source: Harmonized histories GGP, General Social Survey 2006 –Statistics Canada

The hazard functions of having a first child in a second union show that France and Sweden are the countries with the highest risks, mainly from the first two years of second union formation. The United States presents a higher risk than Sweden and France in the first year following the formation of the second union. Then, the United States tends to converge with Canada, Spain, and Germany, while France and Sweden exhibit a higher risk. However, these two countries do not present a convergent pattern. While France shows a high risk between two and five years after the

formation of the second union, Sweden shows a consistently higher risk (compared with the other countries) up to eight years after the formation of the second union

Figure 6. Hazard function by rank of the first child born in the second union, for each country. Women aged 25 to 49 years old at the time of the survey



Source: Harmonized histories GGP, General Social Survey 2006 –Statistics Canada

Figure 6 shows the hazard function of having a first child in the second union according to the rank of the first birth in the new union. Firstly, the hazard functions have different shapes depending on

the rank of birth in all countries. Second, in the first few years from the beginning of the second union, the hazard of having a first child is higher for children of ranks 2 and 3 or higher; this is probably due to the presence of children from the first union. However, in the case of Sweden, the hazard of all birth ranks is close within the first three years of the second union. This can be explained because it is a country with high proportions of dissolution and high repartnering before the age of 45. Finally, for France and Canada, Spain and Germany, the risk increases as birth orders are higher.

6. Multivariate analyses: nested models

[Multivariate analyses will be produced in the upcoming weeks.]

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Appendix

Table 2. Proportion of women who had not repartnered after dissolution by years since the dissolution (percentages). Women 25 to 49 years old at the time of the survey

	Canada	France	Germany	Spain	Sweden	United States
1 year	84	81	82	88	80	80
2 years	68	65	65	74	59	61
3 years	56	53	52	66	44	49
4 years	48	45	46	59	33	39
5 years	40	39	42	49	26	33
6 years	34	35	39	44	19	27
7 years	30	32	35	40	15	22
8 years	25	28	32	35	12	20
9 years	23	27	30	34	11	18
10 years	20	26	28	30	9	15

Source: Harmonized histories GGP, General Social Survey 2006 –Statistics Canada.

Table 3. Proportion of women who had not given birth after dissolution by years since the dissolution (percentages). Women 25 to 49 years old at the time of the survey

	Canada	France	Germany	Spain	Sweden	United States
1 year	88	89	89	90	91	84
2 years	75	73	73	76	75	71
3 years	66	55	63	64	61	59
4 years	56	48	54	57	52	53
5 years	52	42	49	53	44	50
6 years	49	38	44	49	38	47
7 years	47	35	43	46	32	45
8 years	44	33	42	37	29	44
9 years	42	32	40	37	27	41
10 years	42	30	37	31	26	40

Source: Harmonized histories GGP, General Social Survey 2006 –Statistics Canada.