



State-of-the-art report **Childlessness in Europe**

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State-of-the-art report

Childlessness in Europe

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Abstract: In the last decades, European societies have experienced changes in the postponement of the age of having a first child, shrinking family size, and increased (in)voluntary childlessness. This report provides a review of the state-of-the-art research in relation to one of the central research goals of Working Package 4: to examine the rise, determinants and societal consequences of childlessness by different perspectives. The report provides an overview of the central macro-level determinants of childlessness among women and men firstly from a quantitative perspective examining trends, relevant determinants and measures. We will then outline the central micro-level determinants of childlessness among women, men and couples by examining core characteristics of childless individuals such as higher education or marital disruption. We then turn to an overview of anthropological and qualitative examinations of the determinants of childlessness and the psychological, social and socio-political consequences of childlessness. A reflection on potential data sources to study childlessness and a discussion on research gaps are offered in the concluding chapters.

Keywords: childlessness, voluntary childlessness, involuntary childless, infertility, childfree, low fertility, fertility postponement, male infertility

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1 Introduction

The objective of Working Package 4 (WP4) is to examine the changing role of children, with a specific focus on the **rise, determinants and societal consequences of assisted reproduction, late fertility and childlessness**. In the last decades, European societies have experienced massive changes in the postponement at the age of having a first child, shrinking family size, and increased (in)voluntary childlessness (Mills et al. 2011; Rotkirch 2007; Sobotka 2009; Tanturri & Mencarini 2008). Recent estimates of women's childlessness for the cohorts born around 1965 reveal that it has become an increasingly large group in Italy (~25%), Germany and Finland (~20%) (OECD 2011). This WP examines the core aspects of these topics that have been previously neglected, takes stock of the past situation, charts current trends and makes evidence-based recommendations. This rise in late fertility has also been accompanied by the rapid diffusion of various types of assisted reproductive technologies (ART), which is the other core topic of WP4, which is reviewed in a second companion state-of-the-art report which is published separately.

The report provides an overview of the central macro-level determinants of childlessness among women and men firstly from a quantitative perspective examining trends, relevant determinants and measures. We will then outline the central micro-level determinants of childlessness among women, men and couples by examining core characteristics of childless individuals such as higher education or marital disruption. We then turn to an overview of anthropological and qualitative examinations of the determinants of childlessness and the psychological, social and socio-political consequences of childlessness. A reflection on potential data sources to study childlessness and a discussion on research gaps are offered in the concluding chapters.

1.1 Background: Fertility in Europe

Europe is characterized by low fertility, postponed childbearing and an increase in childlessness among younger generations. In the 27 countries that form the European Union¹ today, the Total Fertility Rate (TFR)² has declined from a level of above 2.5 in the 1960s to a

¹ In this report we often refer to 'Europe', which generally means the EU-27 and in some cases, acceding states, candidate or third countries. For a summary of the EU-27 countries, acceding states (Croatia entered in July 2013), candidate countries (Montenegro, Iceland) and third countries (Norway, Switzerland) and their abbreviations, refer to Table 1A in the Appendix.

² The Total Fertility Rate is the average number of children who would be born alive to a woman during her lifetime if she were to pass through all childbearing years conforming to the age-specific fertility rate for a given year. The Cohort Fertility Rate is the average number of children women have had in a certain cohort, and can thus be reliably estimated only after that cohort has reached the age of 45.

level of about 1.5 in 1995 where it has remained for a decade. The actual or completed cohort fertility rates (CFR) for women born will be higher than this, probably around 1.8 (Myrskylä et al. 2013). This is because the TFR is lower if women are having their first births later in life. Indeed, in the last few years the TFR has shown some signs of a rebound, as the average TFR in the EU-27³ countries is just under 1.6 children per woman, and even the CFRs may rise in some parts of Europe. Nevertheless, almost all EU Member States now have or are expected to have TFRs and CFRs at or below 2.1, which is the ‘replacement level’ defined as the hypothetical level needed for the replacement of generations discounting the effects of migration.

Fertility trends are far from being homogenous with divergence between European countries characterizing fertility rates (Coleman 2007). More specifically, it seems that Europe is divided along three fault-lines, which are constituted by long-standing cultural, political and economic cleavages (Coleman 2007; Reher, 1998). One demographic fault-line consists of both North-Western and Anglophone Countries, where fertility levels have long been quite high and stable, remaining relatively close to replacement level (TFRs of at least 1.8 children, above 2 in the case of Iceland, Ireland and France), which at the moment appear to be relatively stable, which is also related to positive migration inflows. Southern Europe and the German speaking countries comprise a second group with much lower birth rates – 1.4 or less, where the postponement of motherhood has started later than in the North-West and have not as of yet experienced a complete recuperation. Even with immigration, they will face population decline and more severe population ageing. The third group of countries consists of Eastern Europe, which is experiencing a dramatic demographic change, characterized by an extremely rapid fertility decline in the 1990s, relatively high mortality and also high net emigration (Coleman 2007; European Commission 2010).

The postponement of parenthood is another characteristic of reproductive behaviour in Europe. This is considered as one of the most common features of fertility change in the Continent, to the extent that some authors refer to it as a distinctive “postponement transition towards a late-childbearing regime” (Kohler et al. 2002; Balbo et al. 2013). In the last few decades, general and progressive delay of first childbirth has been observed in virtually every European Union country. In 2010, the average mean age at motherhood was increasing and came very close to 30 years for many EU-27 countries in 2009. A sharp decrease in fertility rates of women aged under 30 started almost 50 years ago, but in the last decade this has been

³ For a listing of the EU-27 countries, acceding states (Croatia, entered in July 2013), candidate countries (Montenegro, Iceland) and third countries (Norway, Switzerland), refer to Table 1A in the Appendix.

accompanied by an increase in fertility of women in their 30s (OECD 2011). On average, half of the births registered in the EU are to mothers aged over 30, but the proportions are even larger in Ireland, Spain, Italy, the Netherlands, Sweden, Denmark, Germany, Greece, and Finland (European Commission 2010). While it was common for women to continue childbearing into their 40s until the 1960s, the new feature is the postponement of first births to later ages. Thus the relative number of all births to women aged 40+ was as much as eight times higher in Sweden in 1900 compared to 2000. But while first births above 40 were very rare in 1900, they have more than doubled in Sweden for women aged 40-45 in the last four decades (Billari, Kohler, Andersson & Lundström 2007). Lower child mortality, higher educational attainment of successive generations of women, their growing aspirations to be economically active and financially independent, the difficulties of combining parenthood and paid employment, and the wish of parents to secure financial security before having children are among the major causes of parenthood postponement (Nicoletti & Tanturri 2008; Mills et al. 2011; Balbo et al. 2013).

The general trend for rising age at first birth in several countries and subpopulations means that postponement will likely contribute further to increasing childlessness (Nicoletti & Tanturri, 2008). Furthermore, the European recession in 2008 and afterwards has since 2010 decreased total fertility rates in several countries, stopping the modest recovery observed in some and decreasing in others (Sobotka, Skirbekk, & Philipov 2011, Goldstein et al. 2013). Economic uncertainty and hardship especially affects union formation and having the first child (Mills & Blossfeld 2005). Much of this postponed family formation is recuperated at later stages (Sobotka 2004), however the recession will in itself probably further exacerbate the growing proportions of childless Europeans, most of which are known not to be voluntarily childless.

2 Childlessness in Europe

Europe's fertility decline has been associated with a decrease in the number of large families, but also with a sharp rise in childlessness (Billari & Kohler, 2004; Rowland, 2007). Recent estimates of permanent childlessness for the female cohorts born around 1965 reveal that it has formed an increasingly large group in Italy (~25%), Germany and Finland (~20%), but also in Austria, Belgium, England and Wales, Greece, Ireland, the Netherlands, Poland and Sweden (~15%) (Figure 1), countries characterized by different cultural and socioeconomic

background. Despite this increase, this topic has been understudied in a comprehensive way, and there are no systematically compiled EU statistics available.

Until a few years ago, the proportion of childless women was low and seemed to be mainly due to permanent celibacy and sterility, the traditional determinants of childlessness. It did not attract much scholarly attention, with the relevant exception of the Anglo Saxon countries – the United States, but also Australia and the United Kingdom – where there is a longer tradition in studying this topic (see, for instance: Hakim 2003, Abma & Martinez, 2002; Weston & Qu, 2001; Bachu, 1999; McAllister & Clark, 1999; Rowland 1998, Poston & Trent 1992, Kiernan, 1989; Bloom & Pebley 1982).

In light of the rapid increase in childlessness among younger cohorts, the contemporary question arises as to whether, in addition to the previously known “traditional” causes of infertility, “modern” ones are emerging, possibly related to such dimensions as new systems of preferences, evolving family models and roles, changing socio-economic environment, and so forth. It has been argued, for instance, that motherhood becomes too demanding of commitment when the traditional system of gender roles collapses but a new and egalitarian one is still lacking (McDonald 2000a; 2000b). Alternatively, it is possible that voluntary infertility results from the change in the framework of collective norms which – as Ryder (1979) argued – made motherhood more a matter of individual and life style preferences than of social obligations (Hakim 2003). However, voluntary childlessness remains relatively low at below 10 % in most European countries (Hakim 2003). One could thus also interpret the increase in childlessness as modest, given the actual number of lifestyle options available to young Europeans. From this perspective, the more appropriate question is, why do most people still want children (Foster 2000; Sobotka 2005)?

A more careful evaluation of the reasons behind voluntary childlessness is clearly warranted. It may be especially relevant in those contexts (e.g., the Mediterranean countries) where the consensus of the literature is that almost all women desire to have at least one child (De Sandre et al. 1997; 1999; Goldstein et al. 2003), or that those who choose childlessness tend to be career-oriented women, while actually top-career women are very few and most childless women are lower or middle class (Hakim 2003; 2005).

2.1 Trends and perspectives

In the last decades, European societies have experienced a rise in (in)voluntary childlessness (Mills et al. 2011; Rotkirch 2007; Sobotka 2009; Tanturri & Mencarini 2008). The trends in

the prevalence of definite childlessness are remarkably similar across European countries: a peak in childlessness rates for the 1880-1910 birth cohorts, a more or less continuous drop across the 1910-1945 birth cohorts, and a steady rise across the cohorts born after the Second World War (Rowland 2007). In some countries these trends are observed with a slight delay (e.g. in Southern and Eastern Europe, in general) (Frejka *et al.* 2001; Prioux, 1993).

A recent review on the future of low fertility (Basten *et al.*, 2013) has compiled valuable overviews of the existing parity distribution within Europe with a special focus on childlessness. The French and Scandinavian fertility pattern can be called “egalitarian”, with relatively high fertility, low social status differentials, and low childlessness (Toulemon and Mazuy 2001; Ekert- Jaffé *et al.* 2002; Rendall *et al.* 2009). However, there has been a gradual increase in childlessness, approaching 15% in the younger cohorts, although there are signs of a reversal of this trend at least among Swedish women (Persson, 2010). The fertility pattern in some countries, such as the United Kingdom and Finland, can be called “polarised”, marked by high cohort childlessness (around 20%) but also a higher share of women with four or more children (Shkolnikov *et al.* 2007) and high social status differentials (Ekert-Jaffé *et al.* 2002). Central and Eastern Europe as well as Southern Europe are characterised by both low overall fertility and low but growing proportions of childless people (Mencarini and Tanturri 2008 and Mencarini and Tanturri 2006 for Italy, Seiz 2013 for Spain). The low fertility in the German-speaking countries including Austria, Switzerland, and Western Germany is largely attributable to high childlessness (Goldstein *et al.* 2003; Sobotka 2009; Basten *et al.*, 2013.)

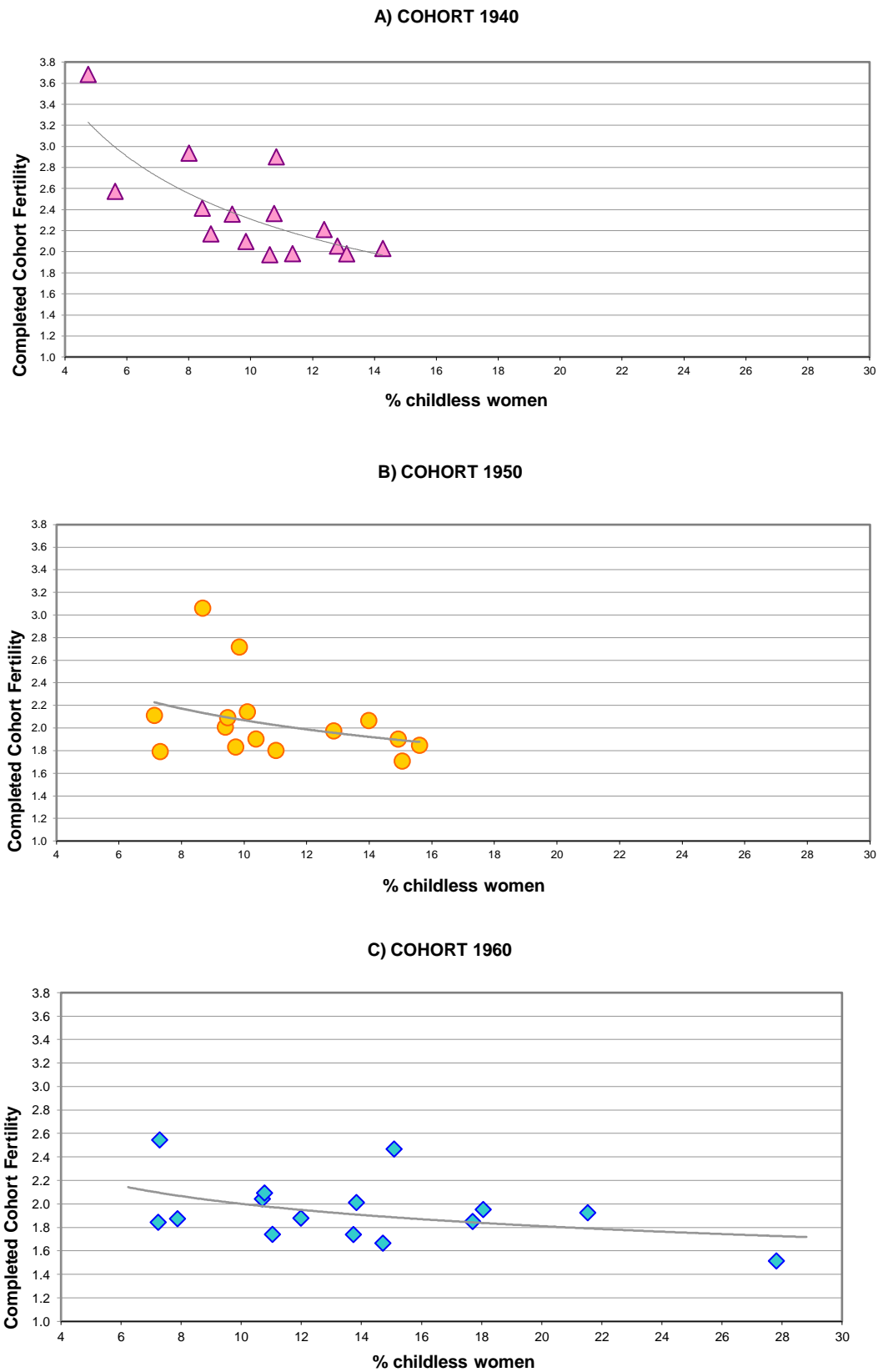
The negative relationships between completed cohort fertility and the prevalence of childlessness are becoming weaker and weaker across the cohorts (Figure 1). Today, countries with similar levels of completed fertility can be characterized by different proportions of childless women (e.g., Austria and Spain) (Figure 2) (OECD 2011). Recent patterns thus suggest that theoretical explanations behind childlessness may differ from those concerned with low fertility as a whole, calling for a new theoretical approach (Tanturri & Mencarini 2008). A comprehensive theory of childlessness indeed remains underdeveloped (Basten 2009, Waren & Pals 2013, Agrillo & Naldini 2008).

Only in the Anglo-Saxon countries is there a long tradition in this field (see, for instance: Hakim 2003, Abma & Martinez, 2002; Weston & Qu, 2001; Bachu, 1999; McAllister & Clark, 1999; Rowland 1998, Poston & Trent 1992, Kiernan, 1989; Bloom & Pebley 1982), while in Southern (Seiz 2013, Tanturri&Mancarini2008; Mencarini&Tanturri 2006; Tanturri 2006) and, especially, in Eastern Europe, studies are few and fragmented and they usually focus only on women’s characteristics and behaviour or are based on small or

qualitative samples. Although they tackled important issues, recent FP7 Programs, such as the Family Platform (<http://www.familyplatform.eu>) and REPRO (http://ec.europa.eu/research/social-sciences/projects/429_en.html), lacked an in-depth and comparative analysis on this topic, based on macro and micro data, as well as qualitative studies. An interesting Economic and Social Research Council (ESRC) project in 2000-2003 studied pathways to childlessness in Europe (<http://www.esrc.ac.uk/my-esrc/grants/RES-000-23-0074/read>).

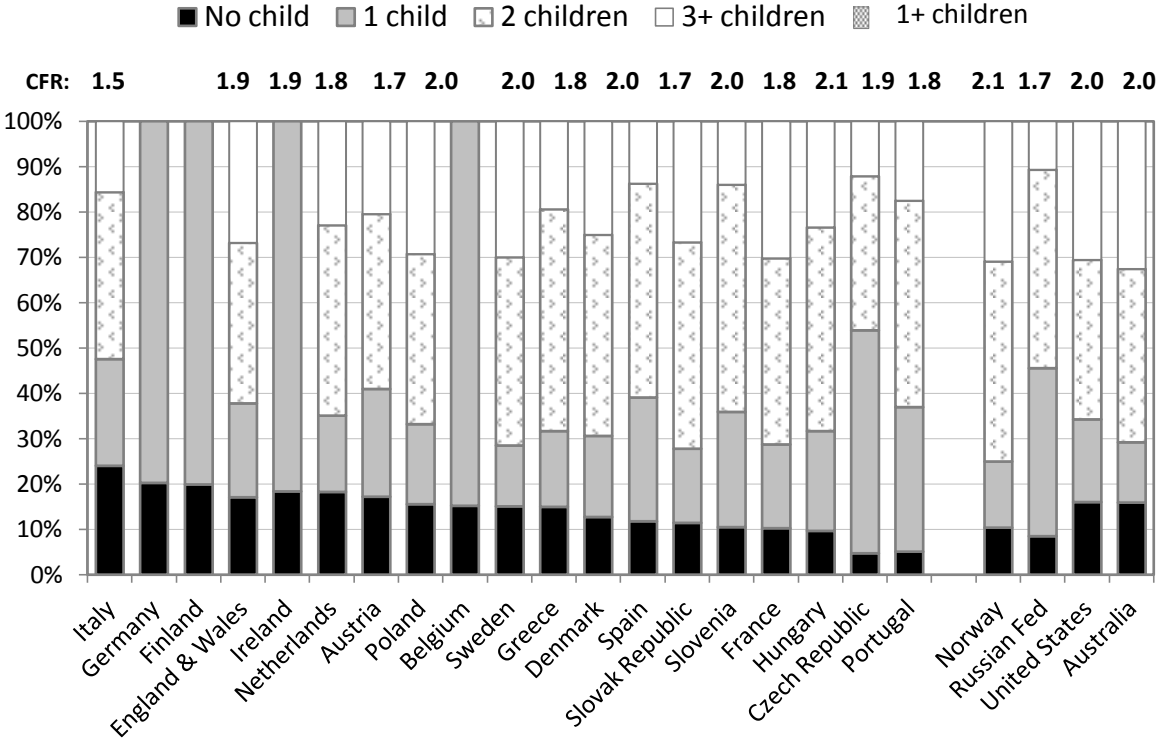
Another compelling question is: What will the future be like? It is not easy to project the final childlessness among women who are still in reproductive age, as the process of postponement of childbearing among young women and ‘catching up’ at later ages can act in different ways (Sobotka 2004, Myrskylä et al. 2013). Using period and cohort fertility data for 17 European countries and the United States, Sobotka (2012) analyses and projects trends in final childlessness among women born between 1940 and 1975. Two basic scenarios of lifetime childlessness are presented for women born after 1955. The first, upper bound scenario, assumes that the most recent age-specific first birth probabilities will remain constant. The second, lower bound scenario, employs Kohler and Ortega’s (2002) adjustment for tempo and variance effects to modify the period first birth probabilities employed in the first scenario. Since both of these methods are markedly less affected by the fertility postponement than the more commonly used incidence rates of first birth order, they should project final childlessness with a considerably higher accuracy.

Figure 1. Relationship between completed cohort fertility and prevalence of childlessness, selected European countries, cohorts born in 1940, 1950 and 1960



Source: Tanturri & Mencarini 2008

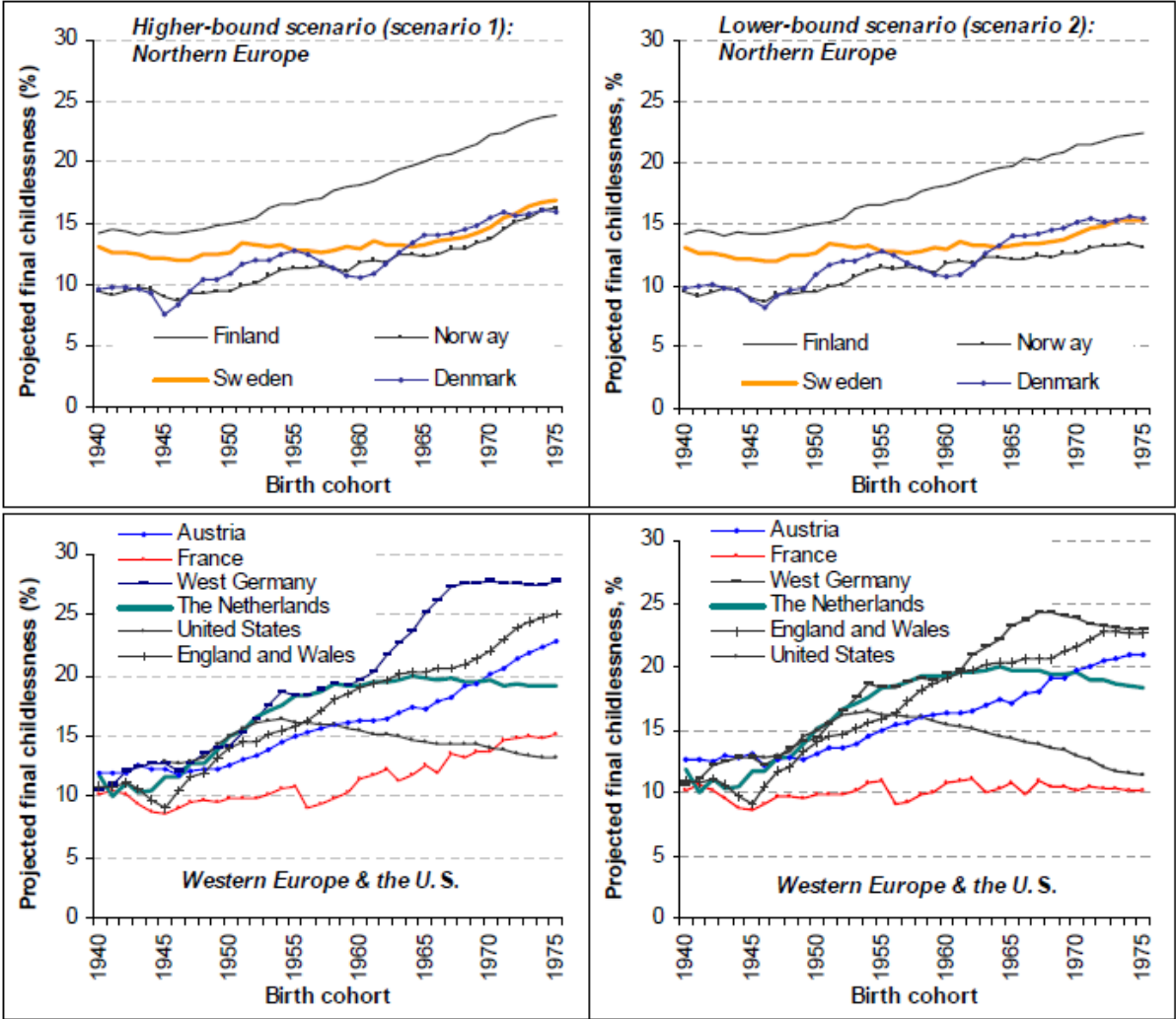
Figure 2. Achieved cohort fertility (CFR) by parity distribution (in percentages) in selected OECD countries: 1965 or latest available birth cohort



Source: OECD (2011)

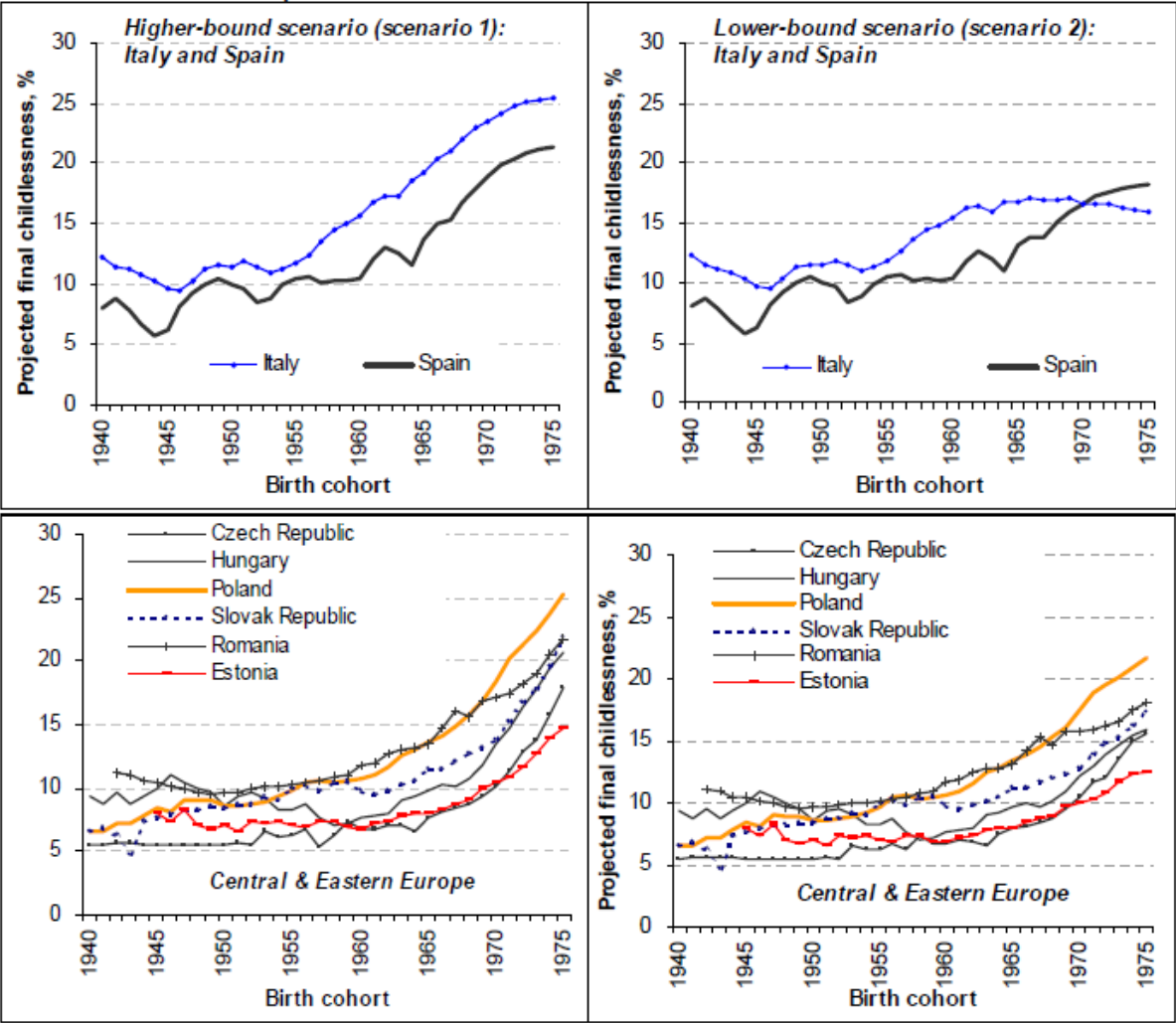
The scenarios presented here reveal that lifetime childlessness will increase gradually in almost all European countries, although the timing and the magnitude of this change varies across countries (Figures 3a and b). Several countries reach considerably higher levels of childlessness among the youngest birth cohorts observed. According to the upper-bound scenario, 23% to 28% women from Austria, England and Wales, Finland, West Germany Italy, and Poland born in 1975 will remain childless. In the lower-bound scenario, final childlessness in all these countries (with the exception of Italy) converges at the level of 21-23%. This ranking of the high-childlessness countries is hardly surprising (Sobotka 2012) and therefore it is interesting to understand what the common underlying micro and macro determinants of this behaviour are and what are instead the country-specific factors.

Figure 3a. Projected final childlessness among women born in 1940-1975: Northern Europe, Western Europe, and the United States



Source: Sobotka (2012)

Figure 3b. Projected final childlessness among women born in 1940-1975: Southern Europe, Central and Eastern Europe



Source: Sobotka (2012)

2.2 Childlessness and parenthood postponement

Childlessness has become increasingly linked to the postponement of childbearing, characteristic for fertility trends in European countries during the last three decades (see Sobotka 2004, Balbo et al. 2013, Nicoletti and Tanturri 2008). Delaying parenthood has been increasingly embraced as a strategy which enables women (and, to a lesser degree, their partners) to pursue higher education, to establish themselves in the labour market, accumulate material resources, enjoy various leisure and consumer activities incompatible with the family life, form partnerships unhindered by everyday child-rearing tasks, and to deal with unstable life conditions and adverse circumstances. Postponed childbearing is, however, also associated with increased indecision and ambivalence toward having children (Rowland 1998; Smallwood and Jefferies 2003) and some of the ‘postponers,’ initially deferring childbearing until they reach some intermediate goal, may gradually become adapted to their child-free situation and lose interest in having a child (Veevers 1980; Rindfuss, Morgan, and Swicegood 1988, Liefbroer 2009; Iacovou and Tavares 2011) or rather some fertility impairments can occur.

Increased infertility (or sub-fertility) among women past age 35 (Menken 1985) is another factor that may contribute to the increasing levels of final childlessness (Beets 2006). Such a relationship is documented for many countries between the delay of parenthood and the overall level of fertility (Kohler, Billari, and Ortega 2002; 2006). As a result of the long-standing shift toward later timing of first births, more and more women remain childless well into their 30s, and the level of final childlessness becomes less predictable even for women in the later stage of reproductive life.

2.3 Definitions and concepts regarding children and childlessness

The investigation of (in)fertility presents a number of conceptual and practical difficulties, due to definitional uncertainties and lack of adequate data. The definition of childlessness denotes the absence of biological or adopted children. However, this same concept includes a variety of situations having different implications for the understanding of reproductive strategies (De Rose, 1996; Houseknecht, 1983). Childless adults form a heterogeneous group, whose common trait is a “non-event” (De Rose, 1996). Here, the term childless is synonymous with nonparent, which excludes those for example, living with the children of their spouse. There are also people who might be childless because they have no living

children left. For a discussion about childlessness as a result of outliving children, see Dykstra and Hagestad (2007).

Childlessness includes a variety of situations, and infertile women may be distinguished according to various criteria: for instance, causes (e.g., sterility or sub-fertility, difficulties in personal relationships, economic reasons, voluntary choice), temporal perspective (i.e., whether it is a permanent or a temporary condition), and degree of commitment to the decision (in other words, whether it is renegotiable, or permanent) (Housecknecht, 1983).

A distinction can be made as to whether this state is voluntary, involuntary, or uncertain/ ambivalent/wavers (Hakim, 2003; Tanturri and Mencarini, 2008; Albertini and Mencarini, 2012, McAllister & Clarke 1999). For our purposes, a first basic distinction must be drawn between men and women who voluntarily refuse mother- or fatherhood (voluntary childlessness) and those who are unable to have children as a consequence of physical impediments or infertility (involuntary childlessness) (Bloom & Pebley, 1982). Voluntary childless individuals are often described as “childfree”, as people who definitely never wanted (do not want) a pregnancy or children of their own, ever. They respond consistently and negative to all the questions on intended childbearing. The early articulators are those who state since the beginning of their reproductive life their preference for a life without children.

The apparently simple distinction from voluntary and involuntary childless however is far from straightforward. If we take into consideration, for instance, women who continually put off having children to the point where this is no longer possible (permanent postponers), in this case a behaviour that was originally voluntary might end up becoming involuntary because of the emergence of fecundity impairments (Barrington 2004). Similarly, the boundary between choice and constraint may also be indistinct in many cases. For instance, failure to enter into a union may depend on choice (women may have little propensity towards family life) (Hakim 2000) or on circumstances (inability to find a suitable partner) (Testa 2007; Tanturri and Mencarini 2008). Obviously, a voluntarily childfree person may also change his or her mind at some point in life and wish for children. The wavers are those women who seem not to have decided yet whether they want to have children or not (McAllister and Clark 2000, Tanturri 2006). Ambivalence towards childbearing is partly fuelled by the perceived and real difficulties, especially for women, to coordinate two conflicting and strongly interdependent ‘careers’ of work and fertility (see Willekens 1991). Furthermore, parenthood has also become identified with ‘total commitment,’ a disruption which many childless people consider threatening to their independence and material security, as it brings unpredictability to their lifestyle (McAllister and Clarke 2000).

A second useful distinction is the temporal perspective. The time frame is pivotal to differentiate between permanent childlessness and temporary childlessness: the former is reached at the end of a woman's reproductive life, whereas the latter is a reversible result of delayed childbearing (Bloom & Pebley, 1982). If this difference can be easily identified for women – because of her biological constraints – the same cannot be said for men whose limits of reproductive age are more blurred and dependent on the age of their female partner (Mills & Tropf 2015). Differences in fecundity between men and women should not be overstated, however, since most heterosexual couples with women of reproductive age in contemporary Europe have an age difference of less than five years, tying a man's fecundity to his partner's "biological clock".

Childlessness is usually defined in contrast with parenthood, defined as a state which includes people who already have at least one biological child, but also people who enjoy parenthood, through adoption, fostering or by having stepchildren (Hakim, 2005). In some studies also those who plan to have children are defined as parents. However, according to Wasoff (2007), this classification raises certain issues: it presents these statuses as static, and assumes that future outcomes are coherent with currently stated preferences. Recent research studies have identified a gap between preferences for childbearing and realized fertility and clarifying the ways intentions are implemented or not (e.g., see REPRO project:, Philipov et al. 2009); classifying together those who state a desire to have children with actual parents ignores differences between these groups (including attitudes and values), which may impact on the likelihood of going on to have children (Simpson, 2007; Philipov et al. 2009). For this reason, we stuck on the classical demographic definition of both childlessness (the lack of any biological children) and parents (having at least a biological child).

3 Theoretical explanations

Few theories comprehensively explain contemporary fertility behaviour and even fewer have direct overarching explanations for childlessness. There is a diversity of determinants proposed in the literature, with many factors mutually interrelated, so that their relative impact is difficult to distinguish and/or quantify. These theories overlap, but are also distinguished by the relative emphasis on individual agency and social structural processes. This report looks separately at cultural explanations, which mainly rely on post-materialist values theory, but also includes preference theory, economic explanations which rely on a mix of rational choice or risk-aversion theory, explanations drawing on a gender perspective, such as gender equity

theory and changing gender and generational relations, and evolutionary explanations which approach fertility from a Darwinian and life history and mate choice perspective (Simpson, 2006; 2007).

The most commonly used theoretical framework in European fertility studies during the last years is the Second Demographic Transition (SDT) (van de Kaa 1987) and the theory of Ajzen's theory of planned behaviour (Philipov, Thévenon, Klobas, Bernardi, & Liefbroer, 2008). These theories do not make predictions about the reasons for or development of childbearing behaviour in developed societies, nor childlessness. Their emphasis on individual choice, values and intentions can however be used for explaining voluntary childlessness (Merz and Liefbroer 2012). Three more specific theories address variation in fertility more directly. Among the most widely used in demography and family sociology are Becker's New Home economics approach, Peter McDonald's *gender equity theory* and Hakim's *preference theory*. Empirical evidence for these theories is mixed.

3.1 Cultural perspectives

3.1.1 Post-Material Values Theory and the Second Demographic Transition

According to the Second Demographic Transition (STD) paradigm (van de Kaa 1997), low fertility is the result of profound cultural changes, in particular, the passage from traditional value systems that maximize the well-being of the family, to systems that favour self-realization and individual options. *Post-Material Values Theory* argues that changes in partnership and parenting behaviour have been driven by the growth of values of self-realisation, satisfaction of personal preferences, and freedom from traditional forces of authority such as religion. Analyzing the transformations in intimacy, Giddens (1992) contends that contemporary partnerships ('pure relationships') are characterized by egalitarianism and individualism, with parenthood no longer an intrinsic aspect of such relationships.

Several qualitative studies provide evidence that the voluntary childless frequently report their desire for independence, freedom and spontaneity, for a life without constraints (McAllister and Clarke 1999, Tanturri 2006). Other studies suggest, however, that these statements might be the result of an ex post realization mechanism (Veevers 1980, Tanturri 2006) or rather a defensive strategy in response to negative stereotyping of women who remain childless (Simon 2006).

The Second Demographic Transition paradigm -- based on the changes that occurred in Northern Europe since the 1960s - has several counterfactual examples. There are many contexts, characterised by low fertility and high level of childlessness (e.g., Italy), where the desire for individual affirmation does not seem to affect the traditional family system so much and on the contrary, a structured and profound "familism" is in force (Livi Bacci 2001, Dalla Zuanna and Micheli 2004), while there are secular societies that are experiencing higher fertility and low childlessness, despite family instability and individualization of life-courses (e.g., Sweden). Other studies points to this, as well as research which demonstrate a gap between ideal and actual fertility (Testa 2012), as evidence counter to the theory. *Other factors* (such as costs, uncertainty, social mobility aspirations and the nature of social institutions) seem also to have an impact on the number of children people have. McDonald (2000a; 2000b) for instance emphasizes the importance of considering childlessness and low fertility as a societal phenomenon, and not only a reflection of individual values.

3.1.2 Preference Theory

Catherine Hakim's "Preference Theory" (Hakim 2000 and 2002) also emphasizes lifestyle preferences and personal values to be the principal determinants of women's fertility behaviour. According to this theoretical perspective, women are heterogeneous and in the first period of their life develop dissimilar preferences with regard to childbearing and lifestyle, which determine their subsequent divergent behaviour. The weakening of moral and social norms encourages women to follow their genuine propensities, and even refuse motherhood, without being stigmatised.

Hakim distinguished three different "types" of women by lifestyle preferences with respect to their attitudes towards family and work. Family-oriented women regard family life and children as the main priorities in life, and therefore decide not to work, unless economic needs force them to enter the labour market. Career-oriented, on the other hand, give more value to a life devoted to work, either in paid employment or in the public arena, and frequently remain unmarried and/or childless. Finally, adaptive women (the majority, between 40 and 80 per cent of the total) have no prevailing preference orientation, therefore they usually want to get the best of both worlds, combining work and family.

Hakim predicted voluntary childlessness to hover around 20 %, while the majority of women would aim to combine work and motherhood, and yet a minority of women would prefer to focus on exclusively on childrearing. Her conclusion was that if fertility policies are

to be successful one should take into account women's heterogeneity and implement specific measures only for women who are more family-oriented.

Empirical analyses (Hakim 2005) of attitudinal data from across Western Countries, aimed at testing the importance of attitudes/values between parents and the childless, found these differences to be less pronounced than expected, although greater between childless women and mothers than between men (for whom careers and income earning remain central life priorities, whether fathers or not) (Simpson 2006). Using comparative data from the 2004/05 Round of the European Social Survey Vitali et al. (2007) tested the links between individual-level preferences and both fertility outcomes and intentions in a variety of European countries. Results confirmed a link between work-family lifestyle preferences and realised fertility in a plurality of settings.

Hakim's analysis presented preferences as fixed attributes of an individual, with less attention on how these are formed or developed (Mencarini and Tanturri, 2006). This approach also does not adequately address how preferences may change over time (which is also notoriously difficult to measure), or the iterative relationship between an individual's preferences/attitudes and the experiences their specific social context affords them (Simpson 2006). Furthermore, since preferences might also be the outcomes of given constraints, it remains questionable whether this 'theory' would hold (Crompton and Harris 1998).

3.2 Economic perspectives

3.2.1 Rational Choice Theory

Economic theory presupposes that the decision to have children is a rational one whereby couples balance the costs and benefits of having children, taking into account their level of income and their personal preferences (Becker, 1960; 1981). According to the economic paradigm, the association between income and fertility is positive. However, couples may want to invest in the quality of children rather than their quantity, and thus decide to have fewer children when the costs of raising children increase. Economic perspective also stresses the role of opportunity costs in childbearing decisions. These are more relevant among highly educated women, for instance, who may want to have only few or no children at all due to costs related to forgone labour market opportunities. In the economic paradigm, couples have fewer children as soon as they become more expensive. In this line of thought childlessness should be the outcome of decreased psychological benefits, unable to compensate the increased economic costs of children.

The historical link between economic development and fertility is negative because children's costs increase, both in terms of direct costs (expenses, education and housing) and in terms of opportunity costs (the cost of forgone labour market opportunities). The rise in the opportunity cost of children is generally seen as a key driver of fertility decline in European countries. Childbearing compels women to withdraw temporarily from the labour market. This not only determines a short-term loss of resources owing to income loss, but also affects future earnings. Is it possible that those women who do not want to pay the 'childbearing penalty' (Joshi 2002) refuse childbearing, even if the empirical results on this point are not univocal. In addition, as income grows, even the negative macro relationship between economic development and fertility levels seems to be questionable: recent studies find a j-shaped relationship (i.e. first negative and after a certain threshold positive) between TFR and GDP per capita (Luci and Thévenon, 2011). In other words, after a certain threshold of income, the connection with the TFR becomes a positive one. As a consequence childlessness at societal level should decrease its prevalence after a threshold, but specific studies have not been conducted yet on this subject.

Limitations of this theory are illustrated, moreover, in the debate about the distinction between voluntary and involuntary childlessness (Wasoff and Carty, 2004). The border between choice and fate is often blurred: for example, postponement may result in unintended childlessness, or revision of original decisions to have children, as people get accustomed to a childless lifestyle and become unwilling to change their priorities, but there are also childless people who seem not to have taken any rational decision at all (Simpson, 2006; Tanturri 2006). Several qualitative studies on childlessness emphasize decision-making about childbearing is an embedded, ongoing process, and that childlessness may display various degree of certainty over their decision (McAllister and Clarke, 1998; Hird and Abshoff, 2000). Sometimes, infertility also seems to be the result of being unable to decide and not obstacles in natural fertility. It is the result of not being able to lower the level of rational control, for fear of choosing a path of no return (Micheli 1995). Further research – mainly qualitative - is necessary to investigate the decision making process leading to childlessness in different contexts and subpopulation.

Empirical evidence shows that micro-economic or rational models do not explain life-time childlessness – that remains essentially a conditional decisional process - but they are more efficacious to identify the factors associated to the process of childbearing postponement leading to temporary childlessness.

3.2.2 Uncertainty Theory

Uncertainty or 'risk aversion' theory builds on the “uncertainty inherent in relation to anticipated future costs and benefits, and assumes that where economic, social or personal futures are uncertain, decision-makers may act to avert risk, especially in a no-return choice as parenthood” (Simpson, 2007). Mills and Blossfeld (2005) developed a schema consisting of three types of uncertainty: economic, temporal, and employment relation. They found that under conditions of economic uncertainty, which is the calibre of economic precariousness of individuals' employment circumstances (e.g., lower earnings, unemployment), youth deferred long-term binding commitments such as marriage and parenthood that require a secure economic background. Following Breen (1997), temporal uncertainty (i.e., often in the form of temporary or fixed-term contracts) reduced youth's ability to make long-term commitments such as parenthood. Finally, lower employment relationship uncertainty (e.g., dependent workers versus self-employed or contract workers) were impeded by their more precarious positions.

Several scholars have associated factors such as economic uncertainty and an increasing individualisation of risk with fertility decline and childlessness (Simpson, 2007). This literature includes work considering the differential risks borne by men and women in a rapidly changing context, where a no-return choice as parenthood can be perceived as extremely arduous. Hobson and Oláh (2006), for example, relate declining fertility to growing economic uncertainty brought about by global restructuring and retrenchment in welfare states, which has meant a weakening of the male breadwinner wage and changes in the consciousness of women around the increasing risks of economic dependency and divorce. Lewis (2006), reporting the findings of exploratory qualitative research on the extent to which individuals regard partnership and childbearing as risks, similarly situates this in a context of the erosion of the traditional family model alongside an increasing expectation of individual responsibility. Kreyenfeld (2010) finds that both objective economic uncertainty (unemployment) and subjective uncertainty (fear of economic situation and job security) have little impact on the postponement of parenthood, with the level of education operating as the underlying driver of the process. In other words, lower educated mothers respond to economic uncertainty by adopting the role of mothers, while their highly educated counterparts postpone childbearing.

The impact of uncertainty, however, was highly filtered by national-level institutions, and gender systems, which resulted in differential responses to uncertainty of women and men

across different national contexts. Lewis (2006: 54) and McDonald (2000a;b) argue that a well-developed welfare state may be more effective at smoothing out risks (for example, financial compensation for care and the provision of care services, social security arrangements for job loss or health problems); however, McDonald notes that the present direction of social and economic policy in almost all industrialized countries is to pass risks away from the state and back on to individuals.

3.3 Gender perspectives

3.3.1 Gender Equity Theory

McDonald in his seminal theoretical articles (2000a; 2000b; 2006) suggests that very low fertility may be the result of a *hiatus* that has enlarged in some developed countries between “high levels of gender equity in individual-oriented social institutions and sustained gender inequity in family-oriented social institutions”. In other words, if recently women have been given the same opportunities as men in education, and to some extent, in the labour market, this has not occurred within the family. Increases in women’s labour market participation did not prompt a rise in men’s domestic duties in most countries, and thus it results in a dual heavy burden for women. The gender imbalance usually deteriorate further when couples have children and therefore especially the more educated women are probably less eager to bring on their shoulder the triple burden of paid work, housework and childcare (Silva and Smart 1999). Beck and Beck-Gernsheim argue that birth rates will not increase significantly as long as it is an individual task for women to resolve the tension between a wish for children and ‘a life of their own’, in the absence of political measures to make these spheres compatible and men’s willingness to take an active share in childcare (2002:126).

In recent years, a growing bulk of empirical research has emerged that examines the impact of gender role-set and gender inequality on fertility behaviour in general, both at micro and macro level, but not specifically on childlessness. In practice gender equity theory is difficult to measure. Although there are several prominent macro-level gender indices (e.g., GDI, GEM, GEI, see Mills 2010 for a review), it remains difficult to empirically capture societal level gender equity and its impact on fertility behaviour. Another problem is that few data sets record perceptions of public and private gender equity and their causal relations with subsequent fertility behaviour.

The numbers of empirical studies analyzing this subject with micro data has grown (e.g Olah 2003, on the transition to second child in Hungary and Sweden; Miller Torr and Short

2004 on US; Cooke, 2009 on Italy and Spain; Mencarini and Tanturri 2004, on Italian urban contexts; Mills et al. 2008 comparing Italy and the Netherlands), and many find that where working women are not overloaded by domestic duties and where men are collaborative, couples are more likely to have (or to wish to have) a further child. As household division of labour or gender equality within a couple usually deteriorates after the first birth, a complete refusal of maternity might be a strategy for some women to avoid gender inequity within the couple. It has been observed that traditional couples are often found to have more children too, but in the last decades this is becoming rarer in the context where women are established in the labour market since more time.

3.3.2 Changing Gender and Generational Relations

Changing Gender and Generational Relations is specifically focused on the change in the social position of women and men relative to each other (MacKinnon, 1995; Irwin, 2000, 2005, Esping-Andersen 2009). Within this framework, changing gender relations are understood as having repercussions for fertility for male and female subjectivities (Irwin, 2005). Both Irwin and MacKinnon describe the patterns of marriage and fertility during the First Demographic Transition and draw on work relating these to shifts in the relative position of men and women (and, in Irwin's case, children and adults) and linked changes in the assumptions of appropriate social roles. This has consequences not just on the grounds for choices and decisions, but also on motivations, desires and behaviours. Esping-Andersen's (2009) influential monograph showed how the remarkable entry of women into the public sphere has not yet been "completed" by a similar male shift into the private sphere, although much progress has been made. While similar to gender equity theory, Esping-Andersen and many others (e.g., Puur et al. 2008; Mills et al. 2008) assume that an increase in domestic gender equity is related to higher fertility. The evidence for this is mixed (e.g., Westoff and Higgins 2009; Miettinen, Basten & Rotkirch 2011). Neither do these theories make specific predictions regarding male and female childlessness.

3.4 Evolutionary perspective

Evolutionary demography and psychology have increasingly been interested in human fertility. The central theoretical underpinning this approach is *life history theory*, a biological theory applicable to all species and related to life-course demography (for a review see Stulp and Barrett 2015). According to life-history theory, any sexually reproducing organism has to

allocate scarce resources over their life-time into three main functions: somatic growth, development and maintenance; mating; and reproduction (Stearns, 1989, 1993). Human evolutionary ecological studies related to fertility have more recently been concerned especially with reproductive timing (Strassmann & Gillespie 2002), the trade-off between numbers and quality of children (e.g. Lawson, Alvergne & Gibson 2012); Schaffnit & Sear 2014), and the effects of kin on fertility (e.g. Tanskanen & Rotkirch 2014).

According to Pritchett and Viarengo, evolutionary theory “provides a micro-level explanation for fertility patterns based on the quantity–quality trade-off in the context of limited resources. This context seems to be appropriate to explain differentials in high-fertility, high-mortality regimes but not in low- and ultra-low-fertility regimes. Specifically, evolutionary fertility models have failed to explain why fertility declines with wealth and social status” (2010: 57). Within the field of evolutionary fertility studies, the view is that although fertility behaviour in advanced societies is not fitness-maximising in the Darwinian sense, fertility behaviour reflects perceived trade-offs between social status and numbers of children (e.g. Goodman, Koupil & Lawson 2012). With the use of molecular genetic data, Troup et al. (2015) demonstrated that individuals with genetic predispositions for an earlier age at first birth had a reproductive advantage and that natural selection operated in not only historical, but also in contemporary populations. There is no distinct theory of childlessness within this field, however. Potential evolutionary approaches to childlessness (or reproductive failure, in biological terms) relate to the pace of life history, social status competition, kin help, and ecological influences on mate choice.

3.4.1 Reproductive acceleration or suppression.

First, one well-studied theory within the life history framework relates to *reproductive acceleration or suppression*. It predicts that individuals growing up in high risk and high mortality environments will opt for earlier and faster reproduction at the expense of growth and maintenance and also at the expense of investing highly in offspring. Empirical support has been found both between and within countries (Nettle 2011). However, in some situations high childhood stress is also predicted to delay or suppress both maturation and reproduction, and individuals differ in their reactivity to such stressors and also in the moderating influences that a family environment can provide (Ellis, Shirtcliff, Boyce, Dearing, & Essex, 2011). Thus childlessness is predicted to relate to specific stressors during childhood development and puberty.

3.4.2 Social status versus numbers of children

The famous paradox of evolutionary demography is why human societies after the demographic transition appear to exhibit a negative relationship between wealth and reproductive success, contrary to Darwinian predictions (see Agrillo and Nellini 2008 for a review). One explanation is that evolutionary adaptations favouring status seeking, which would in previous societies have translated into raising more children successfully to adulthood, are now operating but without any feedback into childbearing. Aarssen and Altman (2006) theorised that behaviours promoting low fertility and childlessness, which have obvious maladaptive consequences in evolutionary terms, are, paradoxically, indirect byproducts of natural selection itself. According to this perspective, this phenomenon would have emerged recently because of the greater empowerment of women in developed countries compared to preindustrial Europe. When women have empowerment and wealth, the practice of leaving something of oneself for the future does not necessarily imply investment in fertility and parental care (Aarssen and Altman 2006). This evolved desire can be expressed instead through other domains (Aarssen 2005).

A recent study assessing the reproductive success of Swedes born in the early 20th century found that, over four family generations, lower fertility increased the socio-economic success of subsequent offspring, and also that the trade-off between numbers of children and their socio-economic success was higher for parents with a higher socio-economic position (Goodman, Koupil, and Lawson 2012). Nevertheless, having fewer children did at no point lead to increased reproductive success in the long run. The authors conclude that “modern fertility limitation represents a strategic response to the local costs of rearing socioeconomically competitive offspring, but contradict adaptive models suggesting that it maximizes long-term fitness. This indicates a conflict in modern societies between behaviours promoting socioeconomic versus biological success” (Goodman, Koupil, and Lawson 2012, p.4342).

However, a growing body of studies have questioned the original claim that fertility is necessarily inversely related to wealth in all developed societies. Especially the probability of ever becoming a father has consistently been found to correlate positively with socio-economic status (Nettle and Pollet 2008; Barthold, Myrskylä, and Jones 2012). Furthermore, in contemporary Scandinavia, mothers with more children are more likely to have higher, not lower, socio-economic positions (Kravdal and Rindfuss 2008) while childlessness can be found both among women with very high and very low education (Miettinen and Rotkirch

2008). Examining the relationship between height (as a proxy for fitness) and reproductive success in the Netherlands, Stulp et al. (2015) found that height was consistently related to reproduction (i.e., number of children born, number surviving children), which favoured taller men and average height women. However, other findings regarding status and fertility are more mixed (Low, Clarke, and Lockridge 1992) or negative (e.g. Low and Clarke 1992).

3.4.3 The helpful kin theory

Having helpful kin around is predicted to raise fertility. One explanation for lower fertility in contemporary societies is our social networks have fewer close kin than before. This approach predicts that those who do have kin around will be less likely to remain childless. Some first studies did find that a higher proportion of kin in a woman's close social network (Mathews & Sear, 2013) or closer relations to one's parents (Waynforth, 2012) raised the probability of having a first child in contemporary Britain and thus reduced the probability of childlessness. These findings suggest that it is not just the presence of kin but also a high quality of kin relations which can support the transition to parenthood (Bernardi 2003; Bernardi and White, 2009; Bernardi et al. 2007; Balbo and Mills 2011). This results is partially contradicted by the evidence that at macro level also Mediterranean countries (e.g. Italy), characterised by strong family ties, have increased the prevalence of childlessness. At micro level this subject deserves further research.

3.4.4 Sex ratios and mating market

Finally, the effects of sex ratios and the mating market are known to shape many aspects of marital and social behaviour. In regions with higher sex ratios (more men compared to women in a certain age group), female choice shapes the marriage market which tends to lead to more marriages and fewer divorces, among other things. Sex ratios have been studied very little in contemporary Europe and have but rarely been related to childlessness, although high sex ratios can be expected to increase male childlessness and low sex ratios to increase female childlessness (Székely & Székely, 2012; Chipman & Morrison, 2013). In related work, Stulp et al. (2014) demonstrated how mating behaviour by height could be used to explain why average height men attain higher reproductive success in US populations.

The plurality of the evolutionary theories briefly examined are able to explain childlessness only partially and the empirical evidence is often controversial, therefore further research is needed to elaborate a more comprehensive and integrated explanation for the phenomenon, to be verified by a combination of qualitative and quantitative studies.

4 Macro-determinants of childlessness

At the macro level, literature identifies few societal and institutional factors that might be associated with the spread of childlessness across European countries (e.g., Prioux 1993, Hakim 2005). Moreover, other micro comparative studies reveal that the macro context can mediate the effect of individual characteristics on the likelihood to remain childlessness (e.g. Gonzalez & Jurado-Guerrero 2006; Meggiolaro & Ongaro 2007). However a comprehensive – either macro or multilevel - study on the effect of societal and institutional determinants of childlessness in Europe is lacking. Recent FP7 Programs, such as the Family Platform and REPRO lack an in-depth, but also broader comparative analysis on this topic, based on both macro and micro data, as well as qualitative studies. The inclusion of several countries and a comparative approach can isolate which factors might be universal from context or institutional specific circumstances. The main macro factors linked to childlessness are described in the following paragraphs.

4.1 Demographic and family change

Demographic and family changes linked to the Second Demographic Transition can themselves contribute to the infertility diffusion, as the trends in family formation (e.g., growing median age at marriage, a sharp reduction in the proportions marrying and a growing preference for other less institutionalised arrangements, as for instance cohabitation or LAT), postponement of childbearing, and the changing impact of voluntary and involuntary factors across countries and cohorts (Rowland 2007; Hakim 2005, Prioux 1993). The impact of family change (e.g. the rise of divorce rate) on childlessness remains an unexplored area of research.

Portanti and Withworth (2009) used representative cohort data from the 1971, 1981, 1991 and 2001 censuses to investigate the circumstances of women at different key ages and to see how these are associated with their lifelong fertility outcomes. Results indicated that single women are the most likely to be childless while married women are least likely to be

childless. However, 68 % of women lived with a partner at some point during the course of the study.

There is no current study of macro factors associated to cohort childlessness in EU countries, since Eurostat does not discern fertility by parity. The OECD Family database includes data on childlessness in OECD countries. One assessment of levels of childlessness was made using EU-SILC 2010: Community Statistics on Income and Living Conditions (2010) analysing data on 33-37 year old women without children living with them by country EU-15 and EU-25. The study provides useful household data and compares childlessness with total fertility rates, observing that there is no clear relationship between them (Household structure in the EU 2010, 2010).

A previous ESRC project in 2002-2003 studied Childlessness in Europe (Hakim, <http://www.esrc.ac.uk/my-esrc/grants/RES-000-23-0074/read>) with an emphasis on causes of childlessness and voluntary childlessness. The study analysed data for 25 countries from the Family and Fertility Surveys gathered in the mid-1990s. The countries were: Norway, Sweden, Finland, the Netherlands, Belgium, France, Germany, Austria, Switzerland, Italy, Portugal, Spain, Greece, Estonia, Latvia, Lithuania, Poland, Hungary, Czech Republic, Slovenia, Bulgaria, Canada, the USA and New Zealand. Results indicated that among people aged 20-39 years voluntary childlessness was falling “below 10% of men and women in all countries except Belgium and Austria, where 14% and 10% of men respectively are certain they do not want children.” In some countries, such as Slovenia and Latvia, fewer than one percent wished to remain childless. The proportion of uncertain respondents varied widely, from 0-1% in Austria and Belgium to almost one in five men in Germany and Poland. Voluntary childlessness is generally higher among men than among women. Although a higher proportion of professional women remain childless, childless women were not especially “career-oriented” and most of them are in low or middle grade occupations (Hakim 2005).

4.2 Women’s growing education level

Increasing shares of European women are making large investments in their human capital. It is not clear whether, to what extent and in which regions the increased investments are in conflict with their reproductive role and what is the impact on the prevalence of childlessness.

There are some comparative studies showing a mediating effect of the context on the impact of variable at micro level. Using data from the eight waves of the European

Community Household Panel Survey (ECHP) (Nicoletti & Tanturri, 2008) estimated duration models for the timing at first birth for 10 European countries (namely Belgium, Denmark, France, Germany, Greece, Ireland, Italy, Portugal, Spain and the UK). They found that higher female education increased postponement of the first birth and, especially after age 30, childlessness, but the impact differs across countries.

Using the most recent Eurobarometer data (2011) on individuals clustered in the 27 EU countries, Testa (2012b) demonstrates a positive association between women's level of education and lifetime fertility intentions at both the individual and country levels, as well as in a micro-macro integrated framework. This association is, however, not related to country differences in terms of childcare services, gender equality, and economic conditions. It is plausible that when policies and institutional contexts allow highly educated women to have larger families, women of reproductive ages are more prone to make investments in both human capital and family size, because these choices are not seen as incompatible alternatives.

An interesting study with nationwide register data found that contrary to expectations, there has been a reversal in the trend of increasing childlessness in Sweden. As Sobotka (2004), Lotta Persson (2010) also suggested that there may be fertility recuperation, due women with high levels of education becoming mothers. The effect of the increase of education level among women on the prevalence of childlessness however needs to be addressed in depth across Europe.

4.3 Social acceptance of childlessness

In the last decades, the spread of childlessness is accompanied by attitudes and value change as in many countries not having a child is now acceptable and even desirable (Salles et al. 2010; Sobotka and Testa 2008). The prevalence and social acceptance of childlessness have increased in recent decades almost everywhere, but it differs across Europe. Using data from the European Social Survey in 20 countries, a recent study by Merz & Liefbroer (2012) tries to shed light about how this social acceptance is shaped, the extent to which approval of childlessness differs across Europe, and what factors cause potential cross-national variation. The approval of voluntary childlessness is highest in northern and western European countries, followed by southern Europe, and that approval rates are lowest in former communist eastern European countries. The majority of respondents strongly disapprove of voluntary childlessness in Bulgaria, whereas in Great Britain a majority neither approved nor

disapproved. By contrast, in Denmark a majority of respondents approved the choice of having no children (Merz & Liefbroer 2012). Results from multilevel models were largely in line with expectations derived from Second Demographic Transition theory concerning traditional orientation, age, religiousness, education, and stage of Second Demographic Transition in a country. The results also corroborated individual-level expectations on the role of gender and socioeconomic status based on New Home Economics theory. It would be interesting to study whether the increase of social acceptance allows a more rapid spread of the phenomenon.

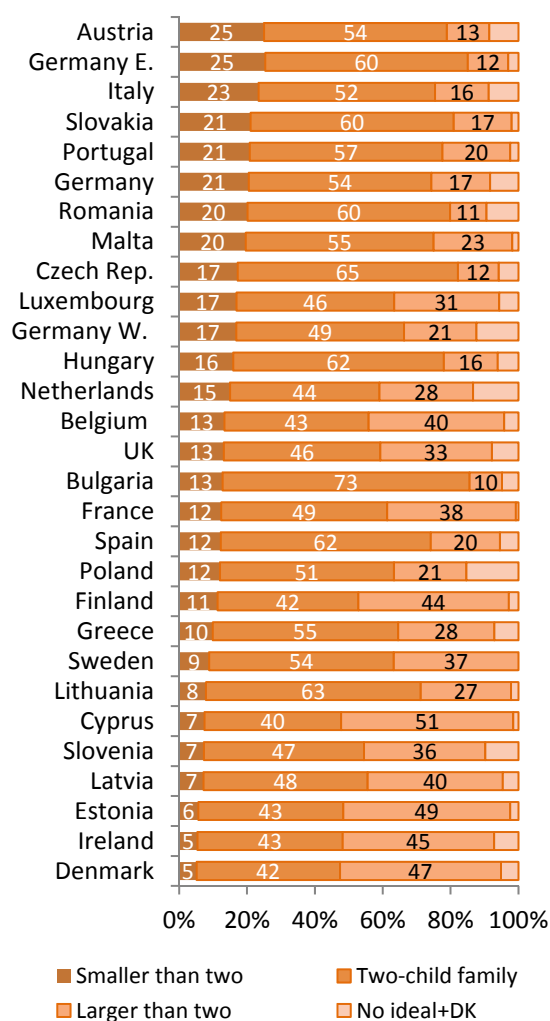
4.4 Change in family size ideals

If childlessness is much more accepted than in the past in Europe, it is also possible that fertility preferences are changing towards childlessness, reinforcing the spread of the phenomenon. A recent contribution by Testa (2012a) analysed the ideal, intended and actual numbers of children in EU countries with multivariate analysis using survey data from the 2011 Eurobarometer on Fertility and Social Climate. In fact, there were no more substantial changes over the last decade and levels of voluntary childlessness remain around a few percent. For respondents aged 40 or above, around 30% had a smaller family size than the one they would have liked to have. The mean ideal-actual gap was 0.3 children. Although men have slightly lower ideals than women, their gap between ideal and actual family size is greater in most EU countries.

Around one in four women aged 25-39 years reports a family with less than two children as an ideal in Austria and Eastern Germany, and more than one woman out of five in Italy, Slovakia, Portugal and Western Germany, and one out of four in Romania and in Malta (Fig. 4). Moreover, those who prefer large families are also a small minority in those countries.

The study shows that highly educated men and women have higher ideal and intended family size, but lower actual family size, suggesting that the highest fertility 'gap' is among highly educated Europeans, especially women. Interestingly, Testa (2012) also found a positive correlation between women's mean ideal family size and the women's share of life satisfaction for the age group 25-39. However, within countries this relationship appeared to be U-shaped, so that those childless and with three or more children being more likely to be very satisfied with their lives. Childless men reported higher life satisfaction than those with children and to a lesser degree than did women (Testa, 2012).

Figure 4: Distribution of women aged 25-39 by ideal family size. 27-EU countries Eurobarometer 2011



Source: Testa 2012, p. 21

In spite of increasing childlessness, the two-child family still remains the most common aspiration of Europeans (around 50%). The mean ideal number of children (both general and for their own family) is two or slightly higher, for both men and women as well as for each age group (Testa 2012). Austria and Romania are the only European countries with aspirations below the replacement level among young female and male cohorts (Testa 2012).

Aspirations, however, seem to differ from the real situations: adding up the number of children already born and the number of children individuals still intend to have, for women in the prime reproductive ages, several countries (Austria, Romania, Spain, Italy, Slovakia, Germany, Malta, and the Czech Republic) have averages of less than two, even if it is still higher than the current average fertility rates (Testa 2012, European Commission 2010).

Therefore, it seems plausible that European couples - and women especially - encounter obstacles to parenthood which prevent them from fulfilling their aspirations.

4.5 Family-friendly policies

The level of childlessness at the macro level can be also linked to the policy context and the type of welfare regime. Even if childbearing choices are usually considered a purely private matter in Europe, policies aimed to remove of the obstacles to having children could contribute to reducing the level of childlessness, at least among the involuntary groups. Moreover, it is a rare case when a private benefit (to help people to have desired children) perfectly coincides with a public advantage (to alleviate population decline and ageing). The literature confirms that where investment in family policies is higher, fertility levels are also higher (Castels 2003). However, we note that the empirical evidence remains controversial and counter-examples are always present, e.g. Germany (McDonald 2008, Neyer 2006, OECD 2011, Gauthier 2007, Thavénon and Gauthier 2011).

There are no studies specifically devoted to study the effect of family-friendly policies on childlessness. Few scholars suggest that it would be important to target measures to parity group (Hakim 2002). However, it is possible that voluntary childless women do not respond even to generous policies (Tanturri and Mencarini 2008), conversely involuntary childless peers could be very responsive to policies that subsidises either ART treatments – if they have fecundity impairments – or support family and work reconciliations – if they encounter problems.

5 Micro-determinants of childlessness

5.1 Micro-determinants among women

It remains a challenge to identify the individual determinants of childlessness, particularly when examining the voluntary group. On the one hand, data specifically collected to assess when remaining childless is a voluntary choice are rare and fragmented (usually qualitative studies). On the other hand, predictors do depend on the context and time, and results are not always consistent. Hakim (2002), for instance, finds that the European voluntary childless are a distinctive group in terms of attitudes and values, but far less so in terms of social and economic characteristics (Hakim 2002). In other studies, however, education, social class and employment status seem to be important determinants for childlessness, irrespective of the

partnership status. Usually childlessness is associated with higher levels of female education (Bachu 1999; Biddlecom and Martin 2006; Keizer, Dykstra et al. 2008; Kneale and Joshi 2008), but recent studies show mixed results (OECD 2011). For instance, in Norway and Denmark in earlier cohorts highly educated women remained childless compared to women with lower education in later cohorts (OECD 2011). Two studies from Hoem et al. (2006) and Neyer and Hoem (2008), cast doubt on the assumption that higher education per se drives higher childlessness. Several factors such as the field of education and the institutional context may influence the relationship between education and childlessness. In the book *Demographic challenges for the 21st Century*, Neyer and Hoem (2008) compared women's childlessness by both educational level and occupational field, showing that the latter is often more important for explaining childlessness. Women in the arts and humanities for instance are more likely to remain childless while women employed in care work are least likely to remain childless. This may partly be due to a selection effect e.g., stemming from personality types, which are known to affect fertility behaviour (Jokela & Hintsala, 2010). However these associations also vary by country, so that the differences between occupational fields were much higher in Austria compared to Sweden (Neyer & Hoem 2008). Other studies have found similar results, generally reporting a positive association between fertility and classical female fields such as teaching and health care (Lappegård & Rønsen 2005; Martin-Garcia & Baizan 2006; Bagavos 2010; Begall & Mills 2013).

The role of household income, too, is ambiguous: in certain studies it seems to have a markedly positive effect on voluntary childlessness (Abma & Peterson, 1995; Bloom & Pebley, 1982), whereas in others its impact is modest (Heaton & Jacobson 1999, Hakim 2005). According to González and Jurado-Guerrero “a woman is more likely to exit childlessness, if she lives in a male-breadwinner couple (i.e. he employed, she economically inactive) as compared to a dual-earner couples, regardless of the women's personal income. However, women with a high income are also more likely to become mothers. In addition, if the couple owns their home, women are also more likely to have a first child” (2006:336) and “a number of socio-economic conditions have to be fulfilled in order to have a first child in the four European countries studied: to be out of school and to be in a partnership” (2006:341).

With regards to values, childless women are usually found to have greater gender equity within marriages, to be less traditional and non-religious (Heaton et al. 1992; 1999, Hakim 2005, Mencarini and Tanturri 2008). In relation to personality traits they seem to be less conscientious but more neurotic (Jokela et al. 2011).

Early life-course experiences are found to have also a role among the micro-factors affecting childlessness: indeed being an only child, remaining single or marrying late or having experienced marital disruption are among the significant factors enhances the odds of remaining childless (Kiernan 1989, Bloom & Pebley 1982, Abma & Peterson, 1995; Abma & Martinez, 2002, Murphy and Wang 2001, Mencarini and Tanturri 2006). Possible pathways leading to childlessness have also shown that the same outcome (childlessness) can be the result of variegated life courses and multifaceted experiences (see for instance Tanturri 2006, Mynarska et al. 2013, Keizer, Dykstra & Jansen 2008).

There is likewise growing interest in research on childlessness among couples and men (Waren & Pals 2013, Parr 2010), but an overarching study on the micro-determinants of both permanent and temporary childlessness and on both voluntary and involuntary childlessness across broader contexts is still lacking. Further systematic research is necessary to understand whether childless women are still strongly characterised by a different socioeconomic background and/or by a less traditional system of values and if it changes across time, countries and welfare regimes.

Box 1: An in-depth: childlessness in Scandinavia

The five Nordic countries (Sweden, Denmark and Norway together with Finland and Iceland) are all characterised by developed family-friendly welfare state systems and relatively high fertility, so that cohort fertility has been hovering around two children per women for over a century, with the exception of Iceland which has even higher fertility. Nevertheless, this region is quite heterogeneous with regard to childlessness prevalence and determinants. Studies of childlessness can use the nationwide register data collected by National Statistics Offices and longitudinal surveys. The literature is rich and here we aim to include work that has focussed on childlessness in the Nordic countries, but has not been published in English.

Higher fertility in Nordic countries is often explained by generous family policies and high levels of gender equality (Rønsen and Skrede 2010). However it is unknown to what extent family policies can facilitate the transition to the first child. Availability of local childcare has indeed been shown to increase fertility at all parities (Rindfuss et al. 2010), while family policy in the form of childcare allowance buffered Finnish fertility at higher parities during the severe economic recession in the early 1990s but did not prevent a fall in the proportion of people having their first child (Vikat 2004). Gender equality also appears to enhance the first stages of family formation in the region (Duvander et al. 2010). The relationship between socio-economic status and having children is positive among men and negative or U-shaped among mothers (Kravdal and Rindfuss 2008; Lappegård and Ronsen. 2011).

Iceland and Norway have the highest fertility as well as lowest ages at first birth and lowest proportion of childless women (around 12% for women born in the late 1960s in Norway). Finland exhibits higher childlessness, with around 19% for the youngest cohorts now completing their fertility (Miettinen 2010). In a book about the Finnish population, demographers Ruokolainen and Notkola (2007) examined parity distribution among female cohorts born in 1935-1960 with PALAPELI register data, a population sample with detailed information about education, socio-economic status, marriages and cohabitation and childbearing over several decades. They found that childlessness increased from about 14 % to 17 % in more recent cohorts, and educational differences in childlessness were gradually disappearing. Childlessness in the 1970s female cohort is estimated to be above 20 %. Based on two previous representative surveys about childbearing intentions voluntary childlessness is concluded to be low, around 1-3 % of the population (Ruokolainen and Notkola 2007).

Kaldager's (2010) examined the effects of income and education on Norwegian men's fertility intentions based on the survey Fremtidsplaner, familie og samliv 2003 (FFS03). Male income was positively related to fertility intentions and realised fertility (within 4 years) among childless men. Income did not affect the fertility of fathers as strongly, even if higher income also here was associated with higher likelihood to plan for a child within four years time.

Jessica Nisén's (2009) work studied the association with education and lifelong childlessness in Finland with survey data from the Health / Terveys 2000 survey using 40-59-aged old women (N=1605) and men (N=1518) (birth cohorts 1940-1960) with logistic regression. Results showed a higher risk of childlessness among women with university education but the reverse association among men. Involuntary fertility and childhood conditions did not explain these associations to a large extent, but marital history had a central effect. Also lifestyle factors affected childlessness, especially among men and in relation to alcohol use.

The theme of a "childfree" life is under debate in Scandinavia. In Sweden, a book and several articles have discussed childfree lifestyles and voluntary childlessness. Peterson and Engwall (2010) report on a study on voluntary childlessness in Sweden (30 women and 6 men), depicting how they created a "legitimate childfree position in a society permeated by pronatalistic norms proclaiming parenthood to be self-evident in an adult normal life." Results showed that most of the interviewees stressed their personal lack of wanting a child rather than external factors, thus positioning themselves as "naturally childfree". Many also left the door open to the possibility of wishing for children. A book by Engwall and Peterson (2010) studied voluntary childlessness in the Nordic countries. Sweden and Finland have several small-scale qualitative studies in the fields of social work, nursing studies and media related to experiences of involuntary infertility, indicating a booming interest in the academic field to this topic.

5.1 Studies of childlessness among men

Men's circumstances and attitudes are likely to form an important part of the explanation for childlessness among women (Parr 2007), but only very few studies have been dedicated to investigate the profiles of childless men and sometimes only incidentally (Parr 2010, Weston & Qu, 2001 on Australia; Kiernan 1989, McAllister and Clark, 1999 on Britain, Tanturri 2010 in Italy, Waren & Pals 2013 for the US). Voluntary childlessness is generally somewhat higher among men than among women across all countries (Hakim 2005). Despite the fact that childbearing generally has a bigger impact on women's lives, women seem to be keener on having children. Women's aspirations to become mothers, however, might be frustrated by men's attitudes, whilst in other cases other women's attitudes to having children tend to follow those of the reluctant men in their lives (Cannold 2004). For instance, in Italy it has been found that differences of opinion between partners are a significant reason for forgoing parenthood intentionally (Tanturri and Mencarini 2008), even if a more recent longitudinal study (Testa, Cavalli and Rosina 2011) shows that the inhibiting effect of partners' disagreements on couple's pregnancy is relevant only among couples who have already two or more children.

Studies specifically on men show that childlessness determinants partly differ between men and women, but also across countries. Family disruption or celibacy is a common cause for not having and not willing to have children for both men and women, as well as secularisation and anti-traditionalist attitudes. It seems particularly interesting to identify which features voluntary childless men and women have in common, and if it is true, if it holds across different macro contexts. For instance, union formation and occupational variables are strong later life predictors of whether a man is childless, but the direction of the association is country dependent. In Britain, the most educated men and those in professional occupations were more likely to be childless (Kiernan 1989, Hakim 2005), while in Australia and in Italy the opposite is true (Parr 2010, Tanturri 2010). In the US, higher education (and more generally other variables reflecting economic status) is not a significant predictor of childlessness among men, while it increases the probability among women (Waren & Pals 2013). Similarly in Italy, voluntary childlessness among men seems to be linked mainly to poor education, poor health and worse social status, while among women the opposite is true (Tanturri 2010). Similar results have been found from several other countries (Barthold, Myrskylä, & Jones, 2012; Nettle & Pollet, 2008) Father's and mother's occupations, the type of schooling and birthplace are important early life-course variables predictors of whether a man is childless in later life, in Australia (Parr 2007).

In a study of pathways into childlessness by Keizer, Dykstra, & Jansen, (2008), survey data (response rate 45%) from the Netherlands Kinship Panel Study (NKPS) was analysed. The results showed that highly educated women but not men were more likely to remain childless. Women who had no breaks in their employment were less likely, whereas men were more likely to enter parenthood. Remaining without a partner for a longer period increased childlessness in women and even more so in men. The study concludes that “men’s childlessness seems to be shaped primarily by the circumstances of their marital career” and that union formation should be taken into account when analysing reasons for childlessness.

Voluntary childlessness in Southern and Eastern Europe represents a relatively new form of behaviour. As such, childless men could be considered cultural ‘forerunners’ in a context characterized by relatively high values of family life and children, low levels of gender equality within the family and also by inadequate opportunities for combining work and family. It is therefore important to understand who these men are. Do they differ in terms of background variables? Or was it related to differences in unions? Is it the case that these men manifest less traditional value orientations? Tanturri (2010) used the Italian variant of the GGS, drawing from the prospective and retrospective survey conducted by the Italian National Statistical Office (ISTAT), called Family and Social Actors. The study found that the determinants of childlessness among men and women partly differ. In particular, voluntary childlessness among men is primarily linked to poor education and health and worse social status (e.g. the unemployed). Conversely, women with a university degree and a managerial position were more likely to be voluntarily childless. Therefore, voluntary childlessness could spread in a different way across social classes: it might become more and more common among both “power women” and “unsuccessful men”. The implications for couples’ fertility would vary according to the type of assortative mating. Not surprisingly, couples’ fragility and permanent celibacy are still important factors associated to childlessness regardless gender, as well as secularization and anti-traditionalist attitudes (Tanturri, 2010).

A Finnish survey on fertility intentions (Social Relationships and Well-being Survey) was conducted in 2008 among 25-44-year-old childless or one-child men and women (response rate 42%). Miettinen (2010) used logistic regression analyses to study childless respondents (N=1,244) finding two types of intentional childlessness. The voluntarily childless do not intend to have children and prefer life without children, while relinquished parents would have liked to have children but no longer intend to have any. Childhood characteristics predicted voluntary childlessness more, while socioeconomic circumstances and lack of a suitable partner better explained relinquished parenthood intentions.

A key question is whether the same characteristics may distinguish childless men and women respectively from fathers and mothers. Characteristics distinguishing childless men (and the different categories among them) from fathers can only partly be hypothesized from past studies, therefore it is interesting to focus on men and compare their profiles with those of childless women, in a plurality of contexts, with a common approach. According to the previous findings, it seems that the spread of childlessness among men has its own determinants, therefore integrating men in the analysis on childlessness is necessary to forecast the spread of the phenomenon across social classes.

6 Psychological perspectives on childlessness

6.1 Introduction

Infertility has long been of interest to psychoanalysts, who have tried to help their childless patients cope with, or even overcome, this condition. The prevailing psychoanalytic understanding of infertility through the 1950s and 1960s was that of psychogenic causation (Leon, 2010) which contributed to the stigmatization of infertile people. With a lack of identification to other factors, unconscious conflicts were believed to cause the inability to conceive. Subsequently, as the medical reasons underlying infertility became progressively better understood and no evidence for these postulated psychogenic bases were found, this emphasis on a search for psychogenic causes eventually faded (Kulish, 2011).

Currently, the focus in psychoanalysis has shifted from an etiological to a therapeutic approach. Those who work with infertile women and men going through infertility treatments (Bassin, 2001) stress the patient's feelings of shame, grief, anxiety, despair, depression, rage, envy of others with babies, and futility, all of which follow from being deprived from parenthood while enduring painful and humiliating medical procedures, which may or may not work. According to Apfel and Keylor (2002), psychoanalysts have recently turned their attention to two salient and problematic factors: the failure to adequately mourn a previous loss and the absence of ambivalence and disavowal of negative feelings about pregnancy and motherhood that is frequently observed among infertile women (Filet, 1993). They also underline that there is no valid research data to support the view that the resolution of psychological conflict, via treatment alone, or together with adoptive parenting, can result in pregnancy. While adoption can reduce the stress of infertility procedures, it cannot overcome issues about motherhood and infertility.

Another striking fact is the strong focus of the literature on childlessness on women only. In fact, modern diagnostic advances now show that 45% of those concerned with the issue of childlessness are men (Apfel and Keylor, 2002). Many argue that women are more affected by their childlessness than men. There are, undoubtedly, social and psychological reasons for this assumed gendered difference. Chodorow (1978) has elucidated the psychological and sociological processes by which the need to mother is instilled in women; that is to say, why women reproduce caretaking and mothering. According to Leon (2010), men are typically less likely to see a doctor for individual treatment and to come for couple-related treatments because of concerns over their marriage or to support their wives: “the profound shame, stigma and assault on masculinity can be so acute for men that they are too mortified to ask for help” (Leon , 2010, p. 50).

6.2 The infertility experience

There is also psychological theorizing among French and English speaking researchers and psychoanalysts about the infertility experience. As clinical experience shows, many individuals perceive childlessness consciously and unconsciously as a punishment (Leuzinger-Bohleber, 2001; Bassin, 2001; Balsam, 2011). For Kulish (2011), the lack of a child is also experienced as a lack of continuity with one’s own past and future; the extension of oneself in the future through one’s children is a way of softening the inevitability of death. The diagnosis of sterility often results in an attempt by the couple to explain the reasons for infertility. These explanations often stem from a strong feeling of guilt. The man feels humiliated, with infertility symbolically representing powerlessness. Women often experience feelings of depression, aggression towards fertile women and blame for not being able to give her husband a child. Women often cope with the feelings of depression by organising procedures and trials of fertility treatments (Weil, 1997).

Infertility is nearly always experienced as an assault to the sense of self-worth and, consequently, may disorganize one’s sense of identity because the ability to reproduce is typically a fundamental assumption of not only a function (what one can do), but also of one’s identity (who one is as a man or a woman). Infertility engenders a feeling of loss of control and so the woman gives away the control of her body to technology, hormones as well as to the doctor (Allison & Doria-Medina, 1999).

The assumed control over one’s fertility through use of contraceptives for many years prior to trying to become pregnant makes this loss of reproductive autonomy more difficult. Many high achieving women believe that few goals are out of reach. The experience of

infertility may be their first significant disappointment, in marked contrast to the success of their professional lives (Leon, 2010). In that case, the pain of childlessness may be especially acute, if it comes with regret and anguish of lost chances. Chodorow (2003) describes this phenomenon in her exploration of fantasies and defences that lead some women to delay childbearing and then to realize that it is “too late”.

The discovery of infertility also shatters the identity of the couple. In that case, the couple can experience a feeling of outrage, as well as experiencing feelings of aggression and jealousy towards those who can conceive. At this time social contact can often become difficult (Dudkiewksy-Sibony, 2006). Suffering from their isolation and loneliness, they feel that the durability of their relationship is threatened and often think about separating. For those couples that remain together, the women are often grateful to their partner. This gratitude is an expression of their need to feel that they can be loved in spite of their infertility. This gratitude also counteracts their aggressive impulses towards the fertile partner (Canneaux, 2009). Due to the prolonged disappointment, frustration and mutual blame, marital emotional closeness is thus often disrupted (Leon, 2010).

7 Consequences of childlessness in the life-course

The consequences of childlessness for the social and economic well-being of the individuals in the family and for societies on the whole should be measured in the medium term as well as in the long run. In most cultures, children surviving to adulthood are seen as a potential source of support for their aged parents: they provide emotional help (Friedman *et al.* 1994), constitute a sort of insurance against dependency (Wenger, 2001), may protect from economic hardship (Cigno, 1991), and frequently play more than just one part (Lillard & Willis 1997). Indeed, their potentially protecting role has frequently been used as an explanation for fertility itself – the so called “old-age security motive” (Nugent 1985).

Previous literature demonstrates that a crucial parameter in projecting the future family support of older people in European countries is the availability of children. However it has been noted that in most analysis on childlessness in old age, the childless are included in the same category as empty-nesters, making it impossible to disentangle the effects of parenthood (i.e., having children) and parenting (i.e., caring for children) (Dykstra 2009). Dykstra (2009) noted that childlessness in late life has remained limited and “studies on childless older adults has suffered from historical myopia, a neglect of men and a disregard for the diversity among the childless”.

A few studies investigate the outcomes of childlessness for both men and women in later stage of the life (Keizer et al. 2008; Koropeckyj-Cox & Call 2007; Dykstra, 2009; Hansen 2012; Albertini and Mencarini, 2012).

Dykstra and Keizer (2009), using data from the Netherlands, find that childlessness contributes to lower social integration in the community, but it does not affect psychological wellbeing. A study using the second wave of the SHARE data analysed the relationships between childlessness and psychological well-being. Gibney (2012) analysed 55–75 year olds with two measures of wellbeing: the EURO-D depressive mood scale and the CASP–12 quality of life scale and OLS regression analyses. Interactions between childlessness and marital status were also examined. Results showed that childlessness significantly increased depression in individuals in Northern Europe only and especially among widows and those never married. Marital status consistently mediated the associations between childlessness and wellbeing (Gibney, 2012). Contrary to expectations, a large-scale Norwegian study did not find more depression and loneliness among elderly childless compared to parents, although childless women (but not men) reported lower self-esteem and life satisfaction (Hansen 2012).

In most European populations, the majority of care required by elderly people who have a high need for support is provided by close relatives, particularly spouses and children, and these family members are also important sources of social support and contact for all older people. Literature shows that the childless tend to have smaller support networks than parents (Dykstra 2006; Kendig 1986; Tommasini&Wolf 2000; Wenger et al. 2000, Wenger et al. 2007) and this is not only because they are more often single and have no ties to children and grandchildren. Differences in network size remains, even after controlling for differences in the number of family ties (Dykstra 2009; Lang 2004), attesting to the socially integrating function of parenthood.

It is not surprising that social deprivation is most likely perceived by the widowed childless (Wenger 2001; Wenger et al. 2007). However childless older adults interact with collateral kin more frequently than parents. The never-married childless have the highest levels of sibling contact (Grundy et al. 2007).

Several studies have assessed the role of children as a source of support and care for the aged, but only a few of them have empirically investigated the relationship between childlessness and the economic wellbeing of the older population in the developed countries. In Italy, for instance, having had children has very significant economic benefits: in the short run costs are probably high (a topic not discussed here); in the long run (that is, in old age), benefits do not accrue in any significant way. Income may not be particularly low, but assets

surely are (Tanturri et al. 2008). Therefore, a childless old age seems to be normally not an economically deprived condition, but it is not clear whether these results are country specific, and comparative research is needed.

8 Potential data sources to study childlessness in Europe

Comparative data on childlessness prevalence covering the cohorts born between 1900 and 1964 resulted from multiple sources, such as census figures published in the United Nations Demographic Yearbook for various years (Rowland, 2007), respectively from the unique collection of data on fertility originally collected by the Institut National d'Études Démographiques, and since 1996 by the Observatoire Démographique Européen (Frejka and Sardon, 2004). Dispersed through a wide range of sources, historical data on the childlessness of women are incomplete, and not widely comparable.

Besides censuses and national registers, another source of data on the trends and the determinants of childlessness are represented by large-scale surveys; moreover, they provide the opportunity to explore the profiles of childless women and men. A first example is FFS (Family and Fertility Survey), coordinated by Population Activity Unit (PAU) in Geneva, and carried out in the mid-1990s in 24 European countries, including Hungary and Italy (but not Romania) (Hakim, 2005). A second example is the Generations and Gender Programme (GGP), a system of national Generations and Gender Surveys (GGS) and contextual databases, which aims at improving the knowledge base for policy making in UNECE countries (see <http://www.ggp-i.org/>). At the moment, the first wave of GGS has been conducted in 18 countries, with some additional waves becoming available only for some countries. The SHARE survey also includes useful comparative information on childlessness in the late phases of the life-course, as it is focused on European aged 50 and plus.

The European Social Survey is useful to compare attitudes toward childlessness in a comparative perspective and the change across time. The Eurobarometer survey has included questions on ideal and intended number of children and thus provide information on trends in voluntary childlessness over time.

At present there is no comparable qualitative research data available on childlessness in Europe or in another cross-national perspective. In our study design, we will carry out a qualitative in-depth interview on one hundred childless people living in Romania, Hungary and Italy. The aim is to examine paths and motivations leading to childlessness. The interest is not only on voluntary and involuntary components but also “prescribed” childlessness. The

latter category refers to the case of non-heterosexual people who are excluded from artificial insemination and joint adoption possibilities in present-day in these countries. Besides applying cultural norm, rational choice and life course theories, we would like to explore the possibility whether childlessness can be interpreted as the lack of childbearing *capabilities*, in the context of the conceptual framework developed by Amartya Sen (1999).

9 Conclusion: Childlessness in Europe

This literature review indicates that childlessness is spreading tremendously across cohorts and across Europe with relevant consequences for the well-being of the individuals within the families and for European Societies on the whole. This has prompted a plethora of studies on determinants of childlessness, yet these often remain fragmented and are carried out using diverse methodologies, definitions and data sources that hinders cross-country comparison.

A central aim of this working package is to provide several innovations beyond existing work. Although there is considerable theoretical work on the postponement of first births and low fertility as a whole, the field currently lacks a comprehensive overarching theoretical framework to describe childlessness. Recent patterns suggest that theoretical explanations behind childlessness are different from those concerned with low fertility as a whole. A first important target of our WP is *developing a comprehensive framework for explaining the different pathways to childlessness*, using the results of both qualitative and quantitative analysis carried out in a plurality of European countries. It is established that childless can be the outcome of diverse pathways.

The survey of previous studies clearly indicates that literature is traditionally quite rich in Anglo-Saxon and Northern Europe, while in the Southern and Eastern European countries, has developed only recently, but remains scarce and mixed. The inclusion of more countries and a comparative approach can distinguish which factors might be universal from contextually or institutionally specific circumstances.

Childbearing is influenced not only by biological fecundity, but also micro-level factors of the reproductive choice of individuals (i.e., planned behaviour, latent individual and partner characteristics) and the macro-level institutional context (i.e., institutional and family structures). Yet these factors are rarely studied together, which is an additional area of progress attempted within this working package. Existing research rarely includes any acknowledgement of childlessness in relation to broader family changes, such as linking

childlessness to the rise in the divorce rate, or the spread of different family forms, which demands further exploration.

Current research in demography has largely examined childlessness using a quantitative approach and standard survey data. This working package will extend existing knowledge by also using and multiple types of quantitative data (surveys and register data), but also cross-nationally comparative qualitative data in an interdisciplinary approach. This permits additional anthropological and psychological insights and a qualitative approach, which have been less widely acknowledged.

This review also indicates that although male fertility has come to the forefront in the last decade, a dual gendered approach in studying childlessness is lacked and men's childlessness urgently needs more attention. A considerable gap in the literature is that both theorizing, but also data and results on childlessness are based almost exclusively on women. We know very little about childless men, and from a handful of studies know that such men are more likely to be divorced, lower educated and have lower occupations, which suggests a gendered inequality gradient.

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