Health and well-being at older ages:

The interlinkage with family life histories, gender, and national contexts

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1. Introduction

Over the past decades, Europe has witnessed major changes in the family-related behaviour of its population (Freijka et al., 2008). Marriage is being foregone or merely postponed, while unions have become more fragile with a rise in divorce, lone parenthood, and remarriages as a result. Furthermore, entry into parenthood has been delayed, the number of children born within families has decreased, and the proportion of men and women remaining childless has increased. These changes took place throughout Europe, although large cross-country differences in timing and tempo are noticeable.

When the implications of these family-related changes in behaviour for health and well-being[1] of older adults are considered, negative messages prevail, particularly in public debates but also in a number of scholarly scenarios (e.g. Popenoe, 1988, 1993; Waite & Gallagher, 2000; Wolfe, 1989). The following arguments tend to be put forward. An increasing number of never-married and divorcees means that more people are at risk of ill-health and premature death as marriage is protective against physical diseases, depression, and feelings of isolation. The rise in divorce also means a lower proportion of people having a partner to lean on and to provide assistance as well as a lower likelihood of getting support from their adult offspring. Childlessness or low parity means no or fewer children and siblings to call on for help. The rise in remarriage means more complex families, including stepchildren and half-siblings, in which support between generations is less self-evident (Bengtson, 2001; Seltzer et al., 2005).

Although these arguments are intuitively appealing, they are often misleading and inaccurate, and lack a sound of empirical basis (Dykstra & Komter, 2006; Harper, 2005; Rosenthal, 2000; Uhlenberg, 1993). Moreover, those previous studies that did examine the late-life health and well-being implications of family-related developments, are limited in terms of their scope. Four drawbacks stand out in particular. First, detailed examination of possible gender differences is still often neglected or, especially in research on childlessness or late parenthood, the focus is only on the implications for women. Second, most studies have been conducted in single-country contexts, making it impossible to generalize the findings to the European population. Third, those few studies using cross-national data have predominantly paid attention to variation between countries, neglecting diversity within the countries. Fourth, the role of obligations and responsibility is often neglected in family support studies. This is surprising as those norms may overrule the negative impact of family-related and other developments, especially in the event of increasing needs.

The activities of Workpackage 3 (Family relations and social integration) and part of the work undertaken within Workpackage 2 (Health conditions) of the MAGGIE research project aimed to fill part of these empirical gaps. This report presents a summary of the main findings. In Chapter 2 we first consider gender differences in the family life histories and circumstances of older men and women and examine how these relate to

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[1] 'Health' and 'well-being' are both an umbrella term, covering a variety of measures (Ter Bekke et al., 2007). In our research, we considered three health indicators: mortality, physical and mental health. With regard to 'well-being' we narrowed our focus to quality of life (i.e., control, autonomy, pleasure, and self-realisation), loneliness, and intergenerational solidarity (including coresidence, geographic distance, frequency of contact, norms of family obligation, and support exchanges between older parents and their children).

mortality, mental health, and quality of life. We then compare the associations between number of children born (quantum) and timing of childbearing in the life course (tempo) on intergenerational exchanges between older men and women and their children in three European countries: Britain, Italy, and the Netherlands. In Chapter 3 we examine whether different types of intergenerational exchange, encapsulated in late-life family typologies, are prevalent in different European countries. In Chapter 4 we consider whether different late-life family types have implications for the physical and mental health of older people and their loneliness feelings. In Chapter 5 we examine the conditions under which filial norms motivate upward intergenerational family support. In Chapter 6, attention is paid to the limitations of our findings and to challenges for future research.

2. Effect of family life histories on late-life health and well-being

2.1. Gender differences in the relationship between marital history and late-life health[2]

Background
Gender differences in mortality and in age differences between spouses mean that in all European countries there are large differences between men and women in marital status and marital history. A diverse and extensive literature suggests that marital experience may be important for health and well-being but there are some inconsistencies in results from different studies and most doubt surrounds implications for older women (Manzoli et al., 2007).

Many of the hypothesised benefits of marriage, such as improved health related behaviours and reduced exposure to or buffering of stress (through social and emotional support and better socio-economic circumstances), should have long-term influences on health as the risks of health damaging behaviour and chronic stress are cumulative. Additionally the formerly married may often still be able to draw on beneficial legacies of marriage, such as social support from children and acquired marital assets. Gender and age are both likely to be important factors influencing associations between marital experiences and health. For example, at older ages the effect of widowhood on socio-economic circumstances may be more gender neutral than in younger age groups because, while young widows or divorcees may lose access to a spouse's earnings, older widows may have entitlements to survivor pensions and shared property.

Data and Methods
We used data from a large record linkage study of England and Wales, the Office for National Statistics Longitudinal Study (ONS LS), to analyse associations between current and past marital status on the one hand and later life mortality and indicators of health (self-rated health and self-reported presence of long-term illness that limited activities) on the other hand. This data source includes information from the 1971, 1981, 1991 and 2001 national population censuses, together with linked information from vital registration. We used these data to derive marital histories since 1971 for men and women in the study in 1991 and then aged 60-79. Figure 2.1 shows how different these were for men and women. We then examined how this marital history was associated with risks of death 1991-2001 and limiting long-term illness in 1991 and 2001, taking account of socio-economic characteristics and, for women, also number of children. The measures of socio-economic status we used were derived from information on highest educational level, on housing tenure at two or more censuses and, for men, on occupation in 1971 and 1981.

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[2] This research was carried out by Emily Grundy & Cecilia Tomassini and presented at meetings of the British Society for Population Studies and the Population Association of America as well as at the European Association for Population Studies Conference in Barcelona. A paper has been submitted for publication.

Legend:
- 1st marriage –long term (pre 1971)
- 1st marriage- since 1971
- Remarried – long term (20+ years)
- Remarried, prev. widowed
- Remarried, prev. divorced
- Widowed- long term (pre 1971)
- Widowed- intermediate (1971-81)
- Widowed- recent (post 1981).
- Divorced- long term (pre 1971)
- Divorced- intermediate (1971-81)
- Divorced- recent (post 1981).
- Never-married

Source: Analysis of ONS Longitudinal Study data.

Figure 2.1. Distribution of men and women aged 60-79 in 1991 by marital history, England & Wales

Results

Results of the analysis of mortality 1991-2001 are presented in Table 2.1. Compared with those in long-term first marriages, men in all unmarried categories, but not those who had married or re-married since 1971, had raised mortality. The highest relative mortality was among widowers who had been widowed for more than ten years (with no differences between those widowed for 10-19 years and those widowed for longer) and for those divorced for between 10-19 years. Never-married men and men who had remarried before 1971 also had raised mortality.

Among women, those divorced within the last ten years had the highest mortality relative to women in long-term first marriages. Mortality was also raised among other divorced women, among all widows, among the never-married and those who were currently remarried and had previously been divorced, but not among those who had re-married following widowhood or those already remarried by 1971. Differences in health status, not shown here, were similar.

Gender differences in these associations indicated a greater co-variance of marriage and socio-economic status for women as compared with men (consistent with the idea that many benefits of marriage come from this association) and a greater effect of absence or loss of marriage on men compared with women (consistent with the idea that men are more dependent than women on the social support and social control elements of marriage).

Results from this analysis also showed that women's mortality varied according to their fertility history with childless women and mothers of large families having higher risks of death and self-reported limiting long-term illness than mothers of two.

Table 2.1. Mortality 1991-2001 (rate ratios) among men and women aged 60-79 in 1991 by marital history since 1971

Marital history at 1991	Men	Women
Age	1.10***	1.10***
Long-term first marriage	1.00	1.00
First marriage since 1971	0.81	1.23
Long-term remarriage	1.13**	1.08
Remarried, previously widowed	0.93	1.00
Remarried, previously divorced	1.03	1.16*
Long-term widowed (20+ years)	1.34***	1.10*
Widowed (10-19 years)	1.36***	1.09**
Widowed (< 10 years)	1.20***	1.12**
Long-term divorced (20+ years)	1.11	1.23**
Divorced (10-19 years)	1.30***	1.13
Divorced (< 10 years)	1.15	1.47***
Never-married	1.22***	1.12**
Tenure/car score 1971-91	0.95***	0.95***
Educational qual. (ref. none)	0.91***	0.84***
Social class score	0.96***	
Number of deaths	13,296	12,254

***$p < 0.001$, **$p < 0.01$, *$p < 0.05$.

Conclusion
This research showed how associations between marital histories and health and mortality in older age groups varied by gender in current cohorts in England & Wales. In later life not just current circumstances, but also life history, exerts an influence on health and well-being and both vary by gender.

2.2. Gender differences in mental health among older married couples[3]

Background
Most previous studies of gender differences in mental health have focused on individual level influences, such as variations by gender in associations between mental health indicators and socio-economic status, socio-demographic history or social support (see Walker & Luszcz, 2009). However, individual level approaches may overlook social contextual factors that are important influences on mental health and, more specifically, on gender differences in mental health (Raudenbush et al., 1995; Walker & Luszcz, 2009). Interactional and family system theories emphasize the importance of social context on the onset and development of psychopathologies such as depressive symptoms (Joiner & Katz, 1999; Rehman et al., 2008). Spouses, or in a larger perspective, families represent an important social context which may influence mental health in gender specific ways.

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[3] This research has been carried out by Sanna Read & Emily Grundy. A manuscript will soon be submitted.

Previous studies of spouses (see Townsend et al., 2001; Wight et al., 2009) suggest a substantial correlation between the mental health of spouses although wives score worse on indicators of mental distress than husbands. Such studies have mostly focused on understanding the role of one partner's advancing illness on depression in their spouse (see Goldzweig et al., 2009) or the effects of age, socio-economic factors and decreasing health (Townsend et al., 2001) on communication and psychological quality of the relationship between spouses (see Walker & Luszcz, 2009; Rehman et al., 2008). Fewer studies have looked at mental health in healthy couples. Apart from socio-economic, psychological and health related factors, other partially or fully shared domains of life, such as children, availability of social support and attitudes and practices related to gender roles may have an impact on mental health in couples.

For this reason, studying gender differences in couples may shed more light on hypothesized influences on mental health which operate through social contexts shared by husbands and wives, including family building history and gender differences in roles within a partnership. In this study we therefore investigate gender differences in mental health in married couples, specifically to estimate the effect of the social context of the family on depression in husbands and wives. Aspects investigated include number of children, timing of births, values and practices related to gender roles, length of marriage, coresidence with children and perceived emotional support. In addition to examining how these factors influence the mental health of husbands and wives, we also analyze effects on intra-couple *differences* in mental health in order to further unpick possible gender specific effects of familial roles and histories on mental health in mid and later life.

Methods and data
A sample of married couples born between 1923 and 1953 (*n* of couples= 2,547) were drawn from the British Household Panel Survey (BHPS). The variables included age; socio-economic background (education, employment, tenure status, income); fertility history (number of children and timing of births); indicators of social support (length of marriage, coresidence with child, perceived emotional support, presence of daughter); health related variables (health limitations, smoking); and information on attitudes to gender roles and amount of household work done by husbands and wives. Mental health was measured using the General Health Questionnaire (GHQ-12) (Goldberg & Williams, 1988). The dyadic data from husbands and wives were analysed using multilevel modelling.

Results
The results showed that mental health was correlated between husbands and wives and was poorer among wives compared to their husbands. Of the individual level variables, age, lack of social support, and poorer health status were associated with poorer mental health in married couples. Of the family level variables, coresidence with a child, a larger discrepancy in housework between the spouses and early parenthood experienced by one or both spouses were associated with poorer mental health in couples. There was significant variation in gender differences in mental health between the couples (Figure 2.2). The gender difference was smaller in couples who were coresident with a child aged 16+ and in couples were both spouses had experienced early parenthood. Early parenthood increased the odds of poorer mental health among husbands whereas late child birth decreased the odds of poorer mental health among wives. Having traditional gender role attitudes was related to poorer mental health among wives, but not among husbands.

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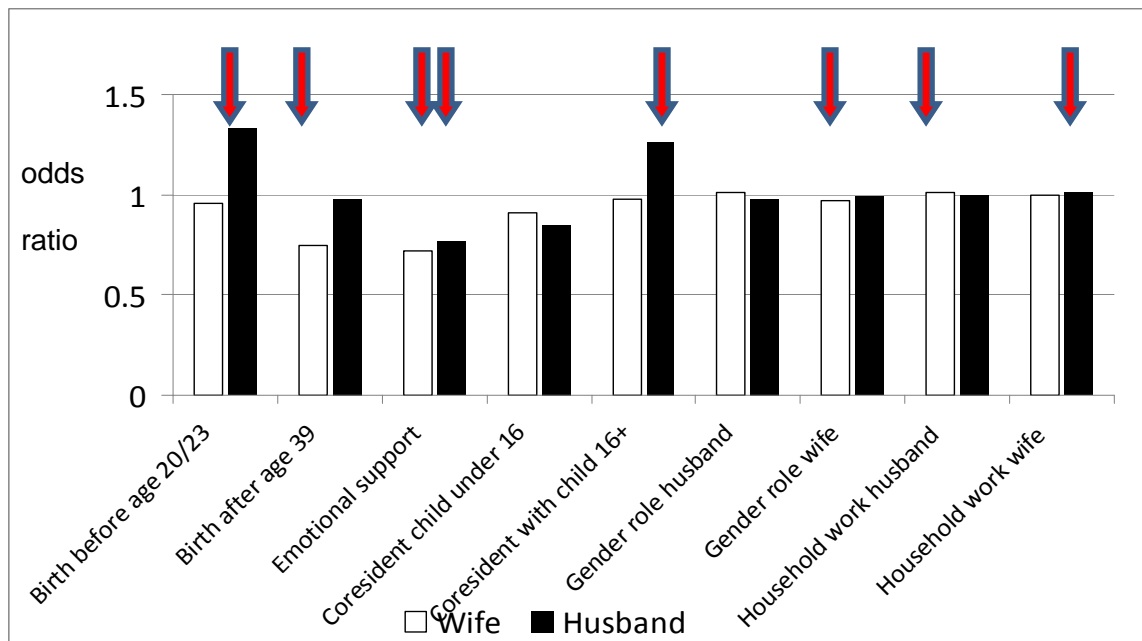
Figure 2.2. Associations between fertility history, social support and gender role, and mental health (GHQ-12) in married couples aged 45-80 in the BHPS (N of couples = 2,547). Number of children, length of marriage and presence of daughter were not associated with mental health. The arrows show results significant at least at the level of $p < 0.05$.

Conclusion

Mental health differences between husbands and wives showed to some extent similar patterns to those found in samples of unrelated men and women. Some family contexts, such as experiencing early parenthood and coresidence with a child decreased gender differences between spouses. In general it seems that even though wives express more mental distress, husbands are more prone to poorer mental health related to family characteristics. Family events though potentially stressful for both partners, may have more positive meanings for wives than husbands or wives may have more effective coping mechanisms for dealing with them than their husbands. On the other hand traditional gender attitudes were related to poorer mental health in wives but not in husbands. However some factors often regarded as more important for women's than men's well-being, such as emotional support and hours spent in household work, were equally important for the mental health of both husbands and wives.

2.3. Implications of fertility history for later life quality[4]

Background

Previous research on quality of life at older ages has identified the importance of material, health related and social influences, including having trusting relationships and

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interactions with family and friends (Netuveli & Blane, 2008). Studies in which older people have been asked what things they consider important in their life similarly have shown that health and the health of those people are close to and relationships with family and friends are the most frequently reported topics (Bowling et al., 2003; Krause, 2007; Salmela-Aro et al., 2009). These domains of later life are closely associated with family life and family building patterns throughout the life course which suggests that fertility histories may be associated with quality of later life.

In this study, we investigated the relationship between fertility histories (number of children and timing of childbearing) and quality of life (control, autonomy, pleasure, and self-realisation) in women and men in two age groups (51-69 and 70-79). Based on previous findings, we hypothesized that low parity (nulliparity and one child) might mean more opportunities for autonomy and thus be positively associated with this dimension of quality of life at older age, especially among women. Conversely we expected that high parity would be negatively associated with autonomy and control. As children can also be an important source of positive feelings, we expected a negative association between nulliparity and feelings of pleasure and satisfaction with life. Early childbearing, having an extensive influence on work and family life trajectories, we expected would be associated with a lower quality of life on all dimensions. Late child birth may increase family constraints in mid and later life and restrict the freedom to plan and choose activities, and so be negatively associated with feelings of autonomy, but may potentially increase feelings of life satisfaction, meaning and self-realisation. We expected that all these associations would be at least partly mediated by socio-economic, social support and health factors.

Methods and data
We used a sample of 6,374 men and women born between 1923 and 1949 drawn from the British Household Panel Survey (BHPS). Quality of life in 2001 was measured using scores from the four subscales, control, autonomy, pleasure and self-realisation, of the CASP-19 questionnaire (Hyde et al., 2003). Fertility histories were derived using information on births of children collected in all waves of the BHPS. The aspects of fertility history investigated were number of children born, and parent's ages at birth of first and last child. Age, education, marital status, tenure status, smoking, coresidence with one or more children, perceived social support and health limitations were included as covariates.

Results
High parity was associated with poorer sense of autonomy in women and men (Figure 2.3). The three other dimensions, control, pleasure and self-realisation, were related to parity in men but the associations were mediated or moderated by socio-economic, social support and health factors. As expected, low parity was associated with both positive and negative quality of life outcomes. Nulliparous women expressed a higher level of autonomy and self-realisation (Figure 2.4). Among men, nulliparity compared to having two children was related to a lower level of pleasure and self-realisation but after taking into account marital status, tenure status, educational level, and smoking, the negative effect of childlessness on self-realisation disappeared.

Early child birth was related to a lower sense of control in men and self-realisation in men and women. There were associations with autonomy and pleasure, too, but they were mediated, or moderated, by the background factors. Late child birth was only related to a

lower level of autonomy among women. This relationship was mediated by qualification, functional limitation and, in particular, coresidence with a child.

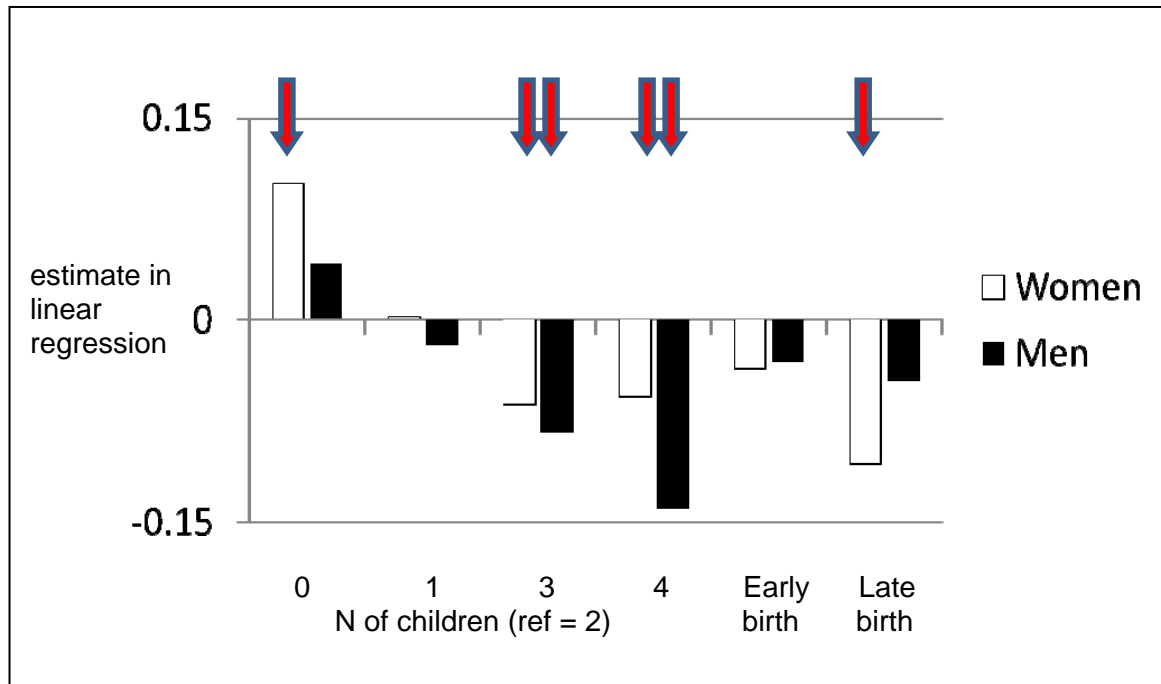*Figure 2.3. Associations between fertility history and autonomy (CASP-19) for women and men in the BHPS (N = 6,374). The arrows show results significant at least at the level of p < 0.05.*
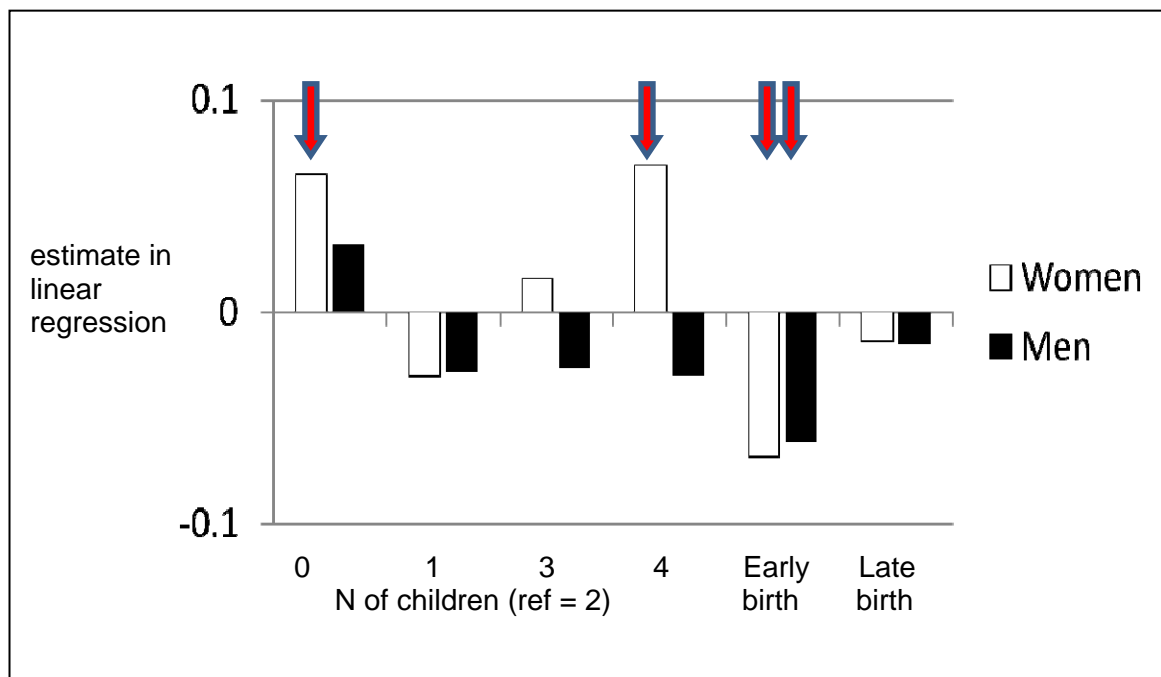

Figure 2.4. Associations between fertility history and self-realisation (CASP-19) for women and men in the BHPS (N = 6,374). The arrows show results significant at least at the level of p < 0.05.

Conclusion
In general the results suggested that having children *per se* does not add quality of life in old age. Childlessness does not necessarily lead to a poorer or better quality of life. The consequences of parity depend on gender, health and social networks, socio-economic factors, and the dimension of quality of life investigated. Fertility history is only one factor among the others that influence later life quality. Several socio-economic, social support and health related factors often mediate the relationship between fertility history and quality of life.

Generally, the results bring up interesting gender differences. Fertility histories have mostly been studied among women, based on the assumption that childbearing and parenthood has more effects on women's than men's health and well-being. Congruent to some previous findings (Buber & Engelhart, 2008; Helbig et al., 2006; Plaisier et al., 2008; Zhang & Hayward, 2001), the present study shows that men are affected too, and in some cases even more than women. The most striking gender differences were the consequences of nulliparity and high parity for women and men. The mediating factors were also in some cases different for men and women. Women may use different coping strategies or they have different expectations related to quality of life than men. The gender differences can result from the differences of female and male life trajectories in these generations.

2.4. Indicators of fertility quantum and tempo and their association with intergenerational transfers in later life: a cross-national comparison[5]

Background
Several studies have shown a positive association between fertility *quantum* indicators (number of children) and family exchange (Knodel et al., 1992; Tomassini et al., 2004b). Older people with more children are, for instance, less likely to live alone and are more likely to have weekly contact with a least one of their children than those with fewer children. Hence, it is generally believed that the current low fertility levels, experienced in almost all European countries, will have a detrimental effect on intergenerational exchange indicators such as the receipt of help from children, resulting in growing pressure on the formal care sector. However, previous studies, including work carried out under the FELICIE programme, has presented some challenges to this view and shown that among cohorts now reaching older age groups the proportions with children are in fact increasing, as these are the parents of the "baby boom" and their children have had improved survival prospects (Grundy et al., 2006; Murphy et al., 2006; Tomassini et al., 2008; Tomassini & Wolf, 2000). It is true though that the shifts to lower fertility were achieved in many countries through reductions in the number of higher order births but it is not clear that there is much advantage, from a support viewpoint, in having four or five rather than two or three children, and the most important distinction is between those with any rather than no children (Palloni, 2001). Also parents of small families may develop closer parent-child relations that may result in stronger ties in later life.

The *timing* of fertility (mean age at fertility and age of the mother at the first and last birth) determines to a large extent whether or not young adult children are still in the parental home when parents reach their 50s and 60s, although trends in home leaving are also important. How might fertility tempo affect intergenerational transfers? Different paths are hypothesised: early childbearing is associated with higher parity, i.e., more potential carers; age at parenthood determines the age of children when parents enter the later phases of the life cycle, when they may have needs for care; postponed fertility in two consecutive generations may result in multiple demands on the women who have both parents in need of care and children still at home; on the other hand an advantage of this may be that the children of very old parents are younger and better able to provide care.

Given the growing concern about reduced fertility in some European regions and possible consequences for support to older people expressed by policy makers, the aim of this study was to explore the effects of fertility quantum and timing on intergenerational exchanges in later life. This association has been investigated in three different cultural contexts; Italy, a "familistic" country where family support is the prevalent source of help for older people; the Netherlands (where the generous State provision of services may affect the strength of such an association), and England and Wales, which has a "liberal" welfare regime (where the interplay between family and public services may be more complicated). Moreover, in order to explore different gender paths of fertility histories and their consequences for support in later life, men and women were studied separately.

Data and Methods
The data used come from three different surveys: for Britain, the 2001 British Household Panel Survey (BHPS), a longitudinal survey of more than 10,000 people followed since 1991; for Italy the 2003 Indagine Multiscopo (IMF) survey that is carried out every 5 years and is based on a nationally representative sample of the private household population; for the Netherlands, the NKPS (Netherlands Kinship Panel Study) survey, a large-scale survey of the nature and strength of family ties carried out between 2002 and 2004 among more than 8,150 men and women aged 18 to 79 who formed a random sample of adults residing in private households in the Netherlands (Dykstra et al., 2005).

We focused on mothers and fathers born between 1923 and 1949. First, descriptive statistics were generated on the main fertility quantum and tempo indicators in the three countries. Next, logistic models were performed, exploring the associations between several indicators of fertility history (i.e., exact number of living children, having had a child before age 23, having had a child after age 35, experience of the death of a child, and presence of step or adopted children in the family) with coresidence, weekly face to face contact, and the receipt of support from children, controlling for a set of demographic and socio-economic variables (i.e., age, marital status, education, tenure, and health).

Results
<u>Descriptive</u>
In terms of fertility *quantum* for the cohorts included in the analysis, British and Italian women show very similar parity distributions, with relatively high proportions of women without children and high concentration in lower parities, especially for the older cohorts (Figure 2.5). In the Netherlands the proportion of childless women is lower, while the proportion of women with three children or more is higher.
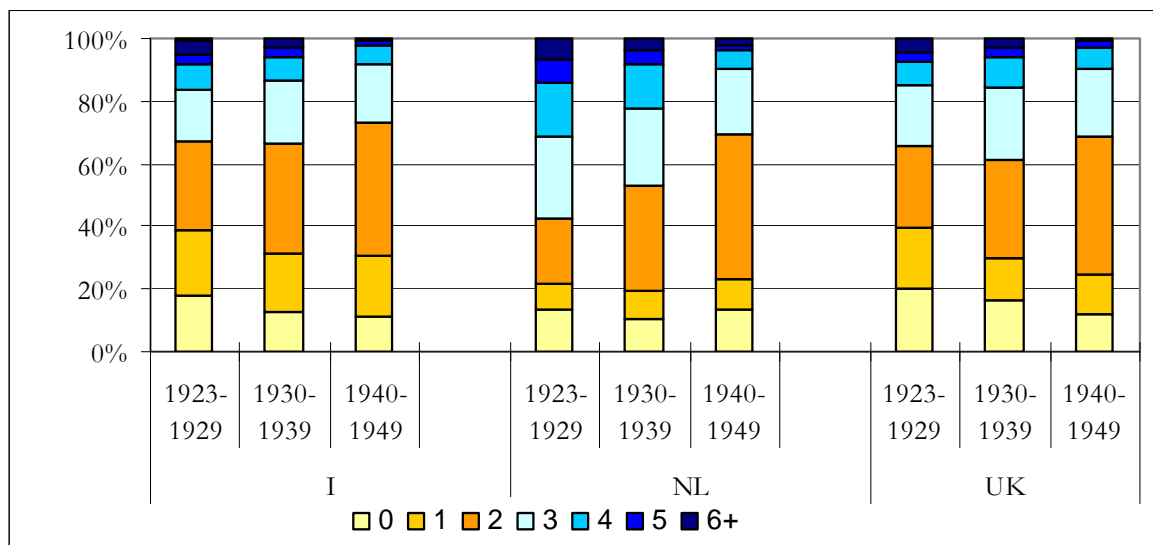
Figure 2.5. Number of children born to several cohorts of Italian, Dutch and British women

In terms of fertility *tempo*, all the three countries show a declining proportion of women with a child after age 35, while an increasing proportion of women with a child before age 23. It should be kept in mind that the younger cohorts included in the study consist of parents of the so-called "baby-boom", which are characterised by high and early fertility patterns.

Models of coresidence

The fertility *quantum* indicators show for women no effects in the Netherlands, while they are significant in the UK and, to a less extent, in Italy (Table 2.2). For men we found a significant effect only in Italy.

Table 2.2. Results from logistic models for the variable of interest: coresidence

	Women			Men		
	UK	**NL**	**I**	**UK**	**NL**	**I**
Number of children (ref. 1 child)						
2	2.44**	1.02	1.52***	1.11	1.62	1.47***
3	2.88**	1.50	1.95***	1.28	1.85	1.73***
4+	3.70***	1.63	2.88***	2.53	2.92*	2.90***
Experienced dead child	1.71	1.13	0.91	1.09	0.73	0.74*
Step and/or adopted children	0.68	0.70	0.87	0.33**	2.31	1.42*
First birth before age 23	0.31***	0.95	0.49***	0.46***	0.35*	0.44***
Last birth after age 35	4.88***	8.51***	2.83***	9.60***	7.98***	4.62***

Note. Controlling for age, marital status, presence of disability, education, and tenure

The fertility *tempo* indicators show for women a significant effect of late motherhood in all countries. This effect was expected since the later parents have their children, the higher the probability that they are still living with them when they enter in old age. Early motherhood is significant for mothers in Italy and the UK, but not in the Netherlands. For men the tempo indicators are significant in all three countries.

Models of weekly contact with non-coresident children
The fertility *quantum* indicators show for women large effects in the Netherlands and UK, and lower, but still significant in Italy (Table 2.3). For men the associations are more differentiated: in Italy having 2 or 3 children increases the probability to see a child compared to having one child, in the UK having 3 or more children, and in the Netherlands having more than 4 children is significant for regular face to face contact. The fertility *tempo* indicators have no effects on weekly face to face contact, neither for women nor for men.

Table 2.3. Results from logistic models for the variable of interest: contact with non-coresident children

	Women			**Men**		
	UK	NL	I	UK	NL	I
Number of children (ref. 1 child)						
2	2.07***	2.19***	1.34	1.53	1.54	1.40*
3	2.54**	3.21***	1.54	2.13*	1.44	1.81**
4+	3.67**	5.22***	1.57	2.76*	2.61**	1.50
Experienced dead child	0.82	1.28	1.09	0.76	0.53	0.87
Step and/or adopted children	0.46	0.64	0.89	0.66	0.19**	0.67
First birth before age 23	1.49	1.14	1.00	0.83	1.60	0.80
Last birth after age 35	1.73	0.66	1.04	1.07	1.29	1.14

Note. Controlling for age, marital status, presence of disability, education, and tenure

Models of support from non-coresident children
It should be kept in mind that for these models different definitions of support have been used reflecting the different questions present in the surveys used for this study. For this reason we do not compare the general level of receiving support between countries, but just how differently the quantum and tempo indicators affect the receipt of support.

The fertility *quantum* indicators show for women significant effects in the Netherlands, small effects in the UK, and no significant effects in Italy, while for men their effects are significant only in the Netherlands (Table 2.4). The fertility *tempo* indicators show no effects on the receipt of support, neither for women nor for men.

Table 2.4. Results from logistic models for the variable of interest: receipt of help from non-coresident children

	Women			Men		
	UK	NL	I	UK	NL	I
Number of children (ref. 1 child)						
2	1.03	1.02	0.97	0.86	1.99**	1.00
3	1.86*	1.50	1.01	1.33	1.68*	0.75
4+	1.35	1.63	1.46	2.27	2.49**	1.28
Experienced dead child	0.45	1.15	0.92	0.58	0.84	0.72
Step and/or adopted children	1.38	0.69	0.79	0.51	0.78	1.35
First birth before age 23	1.17	0.97	0.76	1.29	0.71	0.65
Last birth after age 35	1.17	1.08	1.25	0.62	1.07	0.97

Note. Controlling for age, marital status, presence of disability, education, and tenure

Conclusion
This study showed how indicators of fertility *quantum* seems to have weaker associations with measures of intergenerational exchange in "familistic" cultures (in this study represented by Italy) compared to a more "individualistic" context here represented by the Netherlands, with the UK being in a intermediate position. In addition, fertility *tempo* does not seem to influence intergenerational exchanges in later life, but it should be remembered that future cohorts of older people will experience delayed fertility more frequently than the cohorts considered here and therefore timing may be an issue in the future. Some gender differences have been found, but without a consistent pattern, suggesting that the effects of fertility quantum and tempo on intergenerational exchanges are quite similar between the two sexes.

3. Differences in intergenerational family solidarity across Europe: A western European typology of late-life families[6]

Aim of the study

Intergenerational family solidarity is an important domain of family functioning which has undoubtedly been influenced by the family-related developments referred to the introductory section. Despite the attention that intergenerational family solidarity has received, our knowledge is still fragmented and lacks detail. Hence, the aim of this study was to contribute to a more nuanced view of intergenerational family solidarity across western European countries. To do this, we identified different types of late-life families. Our approach was novel in two respects.

First, we considered *multiple* domains of intergenerational family solidarity rather than focusing on isolated aspects as is commonly done in comparative research on western European families (Albertini et al., 2007; Attias-Donfut et al., 2005; Daatland & Herlofson, 2003; Höllinger & Haller, 1990; Tomassini et al., 2004a, 2004b). Moreover, we explicitly allowed for the possibility that high levels on one solidarity dimension do not covary with high levels on another dimension. For example, parents and adult children might interact frequently but not exchange instrumental support because they wish to be self sufficient (Gans & Silverstein, 2006).

Second, we addressed *variability* in intergenerational family solidarity *within* countries rather than assume that a country has one typical pattern of parent-child relationships. Following Reher's (1998) work on family ties in western Europe, characterizing the center and north of Europe by weak family links and the Mediterranean by strong family links, differences in intergenerational family solidarity patterns in western Europe tend to be described in terms of a north-south gradient (Albertini, Kohli & Vogel, 2007; Daatland & Herlofson, 2003; Hank, 2007; Höllinger & Haller, 1990; Kalmijn & Saraceno, 2008). We argued that different late-life family types are present in varying proportions in all countries (cf. Douglas, 1999; Grendstad, 1999).

Data and methods

Data source

The data stemmed from the second public release version of the first wave of the Survey of Health, Ageing and Retirement in Europe (SHARE). This survey took place in 2004 among 27,500 non-institutionalized individuals aged 50 years and over in eleven European countries: Sweden, Denmark, the Netherlands, Belgium, Germany, France, Austria, Switzerland, Italy, Spain, and Greece. The solidarity typology indicators were derived from answers given by the so-called "family respondent", who was randomly selected from all eligible respondents in a household. As we were interested in intergenerational family solidarity, we restricted our analyses to those who had at least one living child (N = 16,968 cases). We further restricted the analysis sample to parents who had no children living at home, to avoid having patterns of contact frequency and support exchange confounded with coresidence (N = 11,906). The pooled multinational sample is further reduced to 11,181 due to missing values on the solidarity measures.

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[6] This research has been carried out by Pearl Dykstra & Tineke Fokkema. It is currently under revision for an international journal and was presented at a seminar on Family Solidarity at the Netherlands Institute for Advanced Studies in the Humanities and Social Sciences, Wassenaar, April 16, 2009.

The implication of excluding data on parents sharing the same household with one or more of their adult children, is of course that family types based on coresidence fall by the side. Rates of coresidence are higher in the Mediterranean countries than elsewhere in Europe (Hank, 2007; Tomassini *et al*., 2004a). When interpreting the results, it is important to keep in mind that the identified family types represent a larger portion of families in the Scandinavian and Continental countries than in the Mediterranean countries.

Measures of solidarity dimensions
We focused on four dimensions of intergenerational family solidarity: geographic proximity, frequency of contact, norms of family obligation, and support exchange – representing the structural, associational, normative and functional solidarity dimensions in the model of Bengtson and his colleagues (e.g. Bengtson & Roberts, 1991; Roberts et al., 1991). With regard to the first three dimensions, we created three dummy variables: whether the parent had at least one child living within a 5-kilometre radius, whether the parent had more than weekly face to face or other contact with one or more children, and whether the parent had weak family obligation norms. With regard to support exchange, we considered help in kind both up and down family lines, but financial support only down family lines.

Analyses
Latent class analysis (LCA) was applied to construct the typology of late-life families. In LCA one assumes probabilistic rather than deterministic relationships between the latent construct (the concept of interest, in this case solidarity between parents and their adult children) and manifest indicators (the measures actually used) (Hagenaars & Halman, 1989; Yamaguchi, 2000). A basic assumption of LCA is conditional independence, which means that associations between manifest indicators exist only insofar they measure the same latent construct. LCA has the advantage that the classes of the latent construct are discrete and need not be ordered along a continuum (Clogg, 1995). In this study, the classes were typical scoring patterns for the solidarity measures.

In order to assess the validity of the typology of families, we applied multinomial logit regression analysis (Liao, 1994) to examine whether socio-demographic characteristics of parents and adult children, which are known correlates of family solidarity, differentiated family types in theoretically meaningful ways. We looked at indicators of the need for support (e.g., health problems, living alone), the availability to provide help (e.g., number of adult children, having one or more children with a paid job), and the readiness to receive and provide help (e.g., religiosity). To interpret the MNLM results, we estimated marginal effects (Liao, 1994). The marginal effect gives the change in probability by one unit change in an explanatory variable when all other variables are held constant at sample mean values. For example, the marginal effect for a dummy variable is the difference between being in Category 1 and being in Category 0. Per variable the marginal effects sum up to zero.

Results
Four types of late-life families
The optimal number of types in the LCA turned out to be four. These were:
(a) *descending familialism*, characterized by high probabilities of having a child nearby, being in frequent contact with at least one of the children, having strong norms of family obligation, and exchanging help in kind from parents to children (35%);

(b) *ascending familialism*, characterized by high probabilities of having a child nearby, being in frequent contact with at least one of the children, having strong norms of family obligation, and exchanging help in kind from children to parents (25%);

(c) *supportive at distance*, characterized by a low probability of having a child nearby, a high probability of being in frequent contact with at least one of the children, refutation of family obligation norms, and primarily financial transfers from parents to adult children (7%);

(d) *autonomous*, characterized by high probabilities of not living nearby, having little contact, refutation of family obligation norms, and few support exchanges (33%).

We determined the robustness of the latent class model for the various countries included in SHARE by estimating separate latent class models for the three geographic regions: northern Europe (Sweden, Denmark, the Netherlands, and Belgium), central Europe (Germany, France, Austria, and Switzerland), and southern Europe (Italy, Spain, and Greece). The same general family typology emerged, indicating that it is highly robust across the distinguished geographic regions.

It is interesting that no late-life family type has the characteristics of a high probability of help in kind both upward and downward. Apparently, an immediate reciprocity pattern of support exchange is not characteristic of relationships between parents and their adult children in western Europe. The exchange of support among parents and adult children more closely resembles a pattern of reciprocity in the long run, akin to Antonucci and Jackson's (1989) social support bank.

Table 3.1. Distribution of late-life family types by country (weighted %, N=11,181)

	Type 1 Descending familialism	Type 2 Ascending familialism	Type 3 Supportive at distance	Type 4 Autonomous
Sweden	34	19	12	35
Denmark	29	21	12	37
Netherlands	36	28	9	28
Belgium	42	25	5	29
Germany	32	26	7	36
France	25	23	7	45
Austria	28	32	8	33
Switzerland	27	25	6	42
Italy	37	38	3	22
Spain	30	44	1	24
Greece	34	42	6	19

Distribution of late-life family types across western Europe
Table 3.1 shows the distribution of these four late-life family types by country. Each family type is present in each country, but the distributions vary. Interestingly, the proportion of the autonomous type is not the highest in the countries which are generally viewed as the most de-familialized (Esping-Andersen, 1999; Leitner, 2003; Reher, 1998): Sweden, Denmark and the Netherlands. The distribution of late-life family types across countries clearly deviates from the north-south divide that is commonly suggested.

<u>Socio-demographic differentials in late-life family type</u>
Besides country-differences in the distribution of the four late-life family types, socio-demographic differentials are found (Table 3.2). Given the main interest of the MAGGIE research project, we will restrict our attention here to the effect of gender, age, current partner status and marital history, and number of children; for an elaboration of the effect of the other socio-demographic variables, we refer to Dykstra & Fokkema (2009).

Mothers, particularly if they are widowed or in intact marriages, and parents of daughters are more likely to be in the descending familialism type of late-life families and less likely to be in autonomous families than fathers and parents without daughters, respectively. Parent's gender and the gender composition of the children's network are not associated with the likelihood of being in the ascending familialism type or the supportive at distance type.

The parents aged 70-plus have a smaller likelihood of being part of descending familialism families, and a greater likelihood of being part of ascending familialism families than the 50 – 59 year-olds. The aged 60 and over are less likely to be in supportive at distance families than the youngest age group.

Parents living without a partner are less likely to be involved in the descending familialism type, and more strongly so (a) if they are divorced than if they are widowed, and (b) for fathers than for mothers. The opposite holds for the likelihood of being part of autonomous late-life families: it is greater for single older adults than for those living with a partner, and greatest for divorced fathers. The likelihood of being part of the ascending familialism type differs between the divorced and the widowed: the divorced are less likely, but the widowed are more likely than are those living with a partner to be part of a family involving ascending familialism.

Differences by family size involve a contrast between one-child families, and families with two or more children. The likelihood of being part of the descending and ascending familialism types is greater, but the likelihood of being part of supportive at distance families or autonomous families is smaller for parents with two or more children compared to parents of a single child.

Parents with children-in-law have a greater likelihood of being part of the descending familialism type, and a smaller likelihood of being part of the supportive at distance type. Having partnered children shows no association with the likelihood of being part of ascending familialism or autonomous families. Moreover, divorce in the younger generation makes no difference regarding the distribution of family types.

Conclusion
Our findings challenge the view that solidarity patterns are divided along the lines of an individualistic north and a familialistic south. Four identified late-life family types are prevalent in each European country, which were found to be invariant across northern, central and southern European regions. Moreover, socio-demographic differentials in family type follow predictable patterns, underscoring the validity of the developed typology. The distribution of the four late-life family types differs by country and deviates from the often-mentioned north-south gradient. Hence, scholars should move beyond the idea that a particular country is best characterized by a single dominant type of late-life family.

Table 3.2. Predictors of the four types of late-life families: marginal effects of multinomial logit regression (N=9,940)

	Type 1 Descending familialism	Type 2 Ascending familialism	Type 3 Supportive at distance	Type 4 Autonomous
Characteristics parent				
Gender (1 = female)	0.03**	-0.00	-0.01	-0.03*
Age (ref = 50 – 59)				
60 – 69	0.03	0.01	-0.03**	-0.02
70+	-0.17**	0.18**	-0.05**	0.04
Single (1 = yes)	-0.08**	0.08	-0.00	0.01
Single after divorce (1 = yes)	-0.03	-0.06*	-0.01	0.10**
Single after divorce*male	-0.08**	-0.05	0.01	0.12**
Health problems (1 = yes)	-0.07**	0.09**	-0.01	-0.01
Household income (ref = quartile 1)				
Quartile 2	0.02	-0.04*	0.01	0.02
Quartile 3	0.03	-0.06**	0.04*	-0.00
Quartile 4	-0.04	-0.04*	0.04**	0.01
Educational attainment (ref = low)				
Intermediate	0.00	-0.05**	0.03**	0.02
High	0.01	-0.12**	0.06**	0.05*
Religiosity (ref = prays daily)				
Prays weekly	-0.03	0.01	0.02	-0.00
Prays less than weekly	-0.02	0.01	-0.01	0.02
Never prays	-0.04*	0.01	-0.00	0.03
Characteristics adult children				
Number (ref = 1 child)				
2 children	0.07**	0.06**	-0.01	-0.13**
3 children	0.09**	0.08**	-0.02*	-0.16**
≥ 4 children	0.06**	0.13**	-0.02*	-0.16**
≥ 1 daughters (1 = yes)	0.05**	0.01	0.00	-0.07**
≥ 1 children with partner (1 = yes)	0.14**	-0.06	-0.03**	-0.04
≥ 1 children with paid job (1 = yes)	0.06*	-0.02	-0.03**	-0.02
≥ 1 children divorced (1 = yes)	0.01	-0.01	0.00	-0.01
≥ 1 children with high education (1=yes)	-0.01	-0.07**	0.02*	0.07**
Countries (ref = Italy)				
Sweden	-0.06**	-0.13**	0.06**	0.13**
Denmark	-0.08**	-0.10**	0.05**	0.14**
Netherlands	-0.04**	-0.05**	0.03**	0.06**
Belgium	0.04**	-0.12**	0.01	0.07**
Germany	-0.07**	-0.04**	0.00	0.11**
France	-0.11**	-0.11**	0.01	0.21**
Austria	-0.08**	-0.01	0.02**	0.07**
Switzerland	-0.13**	-0.08**	0.00	0.21**
Spain	-0.03**	0.02**	-0.03**	0.04**
Greece	0.03**	-0.01	0.03**	-0.05**

**$p < 0.001$, *$p < 0.01$.

4. Implications of solidarity for late-life health and well-being

4.1. Intergenerational family solidarity and later-life parental health[7]

Background

Despite the wide range of research on intergenerational family solidarity, there have only been a few studies that have tested its association with late-life health (Grzywacz & Marks, 1999; Zuzunegui et al., 2001). Moreover, these studies often provide conflicting results. For instance, some studies suggest that children's emotional and instrumental support has positive effects on the survival and psychological outcomes of parents (Silverstein & Bengtson, 1994; Zunzunegui et al., 2001; Long & Martin, 2000; Lowenstein & Katz, 2005), particularly when older parents are facing widowhood or declining health. However, other studies have found none (Dean et al., 1990), or even negative effects of children's support on the mental health of elderly parents (Mutran & Reitzes, 1984; Markides & Krause, 1985).

Hence, the aim of our study was to investigate the association between intergenerational family solidarity and older adults' health, including the important domain of mental health, in a range of European countries. The study built on a recent typology of late-life families derived by Dykstra and Fokkema (2009) that identified four distinct late-life family types: a) Ascending familiasm; b) Descending familiasm, c) Supportive at distance, and d) Autonomous (see Section 3). Here we extended this work and used this derivation as the basis for investigating associations between a typology of family solidarity and parental health outcomes.

Data and Methods

Sample

The late-life family typology of Dykstra and Fokkema was empirically estimated using data from the Survey of Health and Retirement in Europe (SHARE). Childless older adults were excluded from the analyses, as well as parents with coresident adult children in order to avoid confounding patters of contact frequency and support exchange with sharing the same household. The effect of these exclusions varied considerably by age group of parents and by country, because of large differences in rates of coresidence and ages at which children leave home (Hank, 2007). This is illustrated in Table 4.1 which shows the distribution of the country samples by age group and numbers and proportions of people who were childless or had at least one coresident child. In Greece our analysis sample comprised only 49% of SHARE family respondents aged 50 and over compared with 77% in Sweden. We tested the appropriateness of using the typology in different age groups (50-64, 65-74 and 75+). The four classes (family types) solution was supported in all age groups and was therefore used in all further analyses.

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[7] This research has been carried out by George Ploubidis, Emily Grundy & Tineke Fokkema. The full paper is submitted to an international journal.

Table 4.1. Distribution of parity and coresidence by country (SHARE total sample)

		Pooled sample			50-64			65-74			75+		
		No children	No coresident children	Coresident children	No children	No coresident children	Coresident children	No children	No coresident children	Coresident children	No children	No coresident children	Coresident children
Austria	*f*	248	925	247	113	406	168	70	305	53	65	214	26
	%	17.5	65.1	17.4	16.4	59.1	24.5	16.4	71.3	12.4	21.3	70.2	8.5
Germany	*f*	322	1340	357	189	602	278	82	463	50	51	275	29
	%	15.9	66.4	17.7	17.7	56.3	26.0	13.8	77.8	8.4	14.4	77.5	8.2
Sweden	*f*	199	1634	301	88	761	278	54	485	17	57	388	6
	%	9.3	76.6	14.1	7.8	67.5	24.7	9.7	87.2	3.1	12.6	86.0	1.3
Netherlands	*f*	222	1315	384	130	646	345	51	381	27	41	288	12
	%	11.6	68.5	20.0	11.6	57.6	30.8	11.1	83.0	5.9	12.0	84.5	3.5
Spain	*f*	255	748	807	120	225	499	64	300	158	71	223	150
	%	14.1	41.3	44.6	14.2	26.7	59.1	12.3	57.5	30.3	16.0	50.2	33.8
Italy	*f*	259	731	825	127	245	573	86	316	175	46	170	77
	%	14.3	40.3	45.5	13.4	25.9	60.6	14.9	54.8	30.3	15.7	58.0	26.3
France	*f*	268	1318	481	108	569	389	67	393	58	93	356	34
	%	13.0	63.8	23.3	10.1	53.4	36.5	12.9	75.9	11.2	19.3	73.7	7.0
Denmark	*f*	144	888	139	76	443	124	30	227	8	38	218	7
	%	12.3	75.8	11.9	11.8	68.9	19.3	11.3	85.7	3.0	14.4	82.9	2.7
Greece	*f*	267	959	718	162	281	578	60	353	100	45	325	40
	%	13.7	49.3	36.9	15.9	27.5	56.6	11.7	68.8	19.5	11.0	79.3	9.8
Switzerland	*f*	112	440	151	60	183	120	27	136	24	25	121	7
	%	15.9	62.6	21.5	16.5	50.4	33.1	14.4	72.7	12.8	16.3	79.1	4.6
Belgium	*f*	329	1602	590	165	704	490	86	495	59	78	403	41
	%	13.1	63.5	23.4	12.1	51.8	36.1	13.4	77.3	9.2	14.9	77.2	7.9

Outcome measures
We analysed associations between the family typology and three health outcomes: depression, life satisfaction, and somatic health. Depression was measured using the EURO-D (Prince et al., 1999), a scale that was developed and validated by the EURODEP Concerted Action Programme. The scale includes 12 items enquiring about depression, pessimism, wishing death, guilt, sleep, interest, irritability, appetite, fatigue, concentration, enjoyment and tearfulness. A between-country invariant measurement model for the EURO-D was developed by Ploubidis & Grundy (2009). The model comprises of one general depression factor and two minor depression sub-dimensions. Latent trait scores were estimated from this model and the general depression factor was used in further analysis.

We selected 10 items from the self completion section of SHARE on the basis of the face validity of the items with respect to life satisfaction, presence of positive mood and happiness. Seven of the items were drawn from the CASP questionnaire included in SHARE (Wiggins et al., 2004). An invariant between countries measurement model for the life satisfaction outcome was developed by Ploubidis & Grundy (2009). The model comprised of a general life satisfaction factor and four minor dimensions. Latent trait scores were estimated from this model and the general life satisfaction derived variable was used in further analysis (high score indicates life satisfaction).

A somatic health outcome based on three self-reported health indicators was developed. These indicators were a five category version of a self-reported health item (very good/good/fair/bad/very bad); a binary variable indicating the presence of two or more illness symptoms, and another binary variable that indicated the presence of two or more limitations in instrumental activities of daily living. A unidimensional and invariant between countries measurement model was estimated. Latent trait scores were calculated based on this model and used in further analysis. Scores were coded so that high scores indicate good somatic health.

Co-variates
Age was recoded to a three category variable, the first group included participants aged 50-64 years old, the second participants aged 65 to 74 years, and the third participants aged 75 years or older. Educational qualifications were classified according to the International Standard Classification of Educational Degrees (ISCED 1997) scheme (Hollfmeyer-Zlotnik & Wolf, 2004), and recoded to three categories; grouping together ISCED codes 0, 1 and 2 (pre-primary level of education, primary level of education and lower secondary level of education); ISCED code 3 (upper secondary level of education) and ISCED codes 4, 5 and 6 (post secondary non-tertiary education and higher qualifications). Partnership status was dichotomised into living with a partner or living without a partner.

Statistical modelling
The depression, life satisfaction and somatic health estimated latent trait scores were entered as dependent variables in a Multivariate Analysis of Variance (MANOVA). The solidarity typology, country of residence, gender, age (pooled sample analysis only), educational level and partnership status were entered as independent variables in the model, having their effects adjusted. Main effects and all the 2-way interactions between the solidarity typology and the other predictors in the model were estimated. In order to take account of possible bias arising from the exclusion of childless older adults and those

having at least one coresident child, the analysis was performed for the pooled sample (with control for age) as well as stratified by age group. In Table 4.2 we present main effects from a main effects only model and 2-way interactions from a separate model where interaction terms were added.

Table 4.2. Multivariate tests of between subjects effects

	Wilk's Lambda	F	Hypothesis df	Error df	*p*
Pooled sample					
Intercept	0.999	4.839	3	11066	0.002
Solidarity typology	0.989	13.721	9	26931.89	0
Country	0.792	89.299	30	32481.57	0
Partnership status	0.018	67.189	3	11066	0
Education	0.974	48.825	6	22132	0
Gender	0.980	73.422	3	11066	0
Age	0.971	54.582	6	22132	0
Solidarity typology * Age	0.998	1.156	18	31164.1	0.289
Solidarity typology * Gender	0.999	0.694	9	26815.07	0.715
Solidarity typology * Education	0.997	1.568	18	31164.1	<0.05
Solidarity typology * Partnership status	0.999	1.55	9	26815.07	0.124
Solidarity typology * Country	0.990	1.26	90	32973.54	<0.05
Age 50 - 64					
Intercept	0.976	34.875	3	4340	0
Solidarity typology	0.995	2.648	9	10562.57	0.005
Country	0.815	30.702	30	12739.43	0
Partnership status	0.973	39.716	3	4340	0
Education	0.958	31.043	6	8680	0
Gender	0.974	39.185	3	4340	0
Solidarity typology * Gender	0.999	0.385	9	10460.353	0.943
Solidarity typology * Education	0.994	1.428	18	12157.065	0.107
Solidarity typology * Partnership status	0.997	1.648	9	10460.353	0.096
Solidarity typology * Country	0.974	1.26	90	12863.154	0.059
Age 65 -75					
Intercept	0.998	2.84	3	3669	0.037
Solidarity typology	0.983	7.206	9	8929.533	0
Country	0.764	34.523	30	10769.92	0
Partnership status	0.984	19.688	3	3669	0
Education	0.984	10.213	6	7338	0
Gender	0.978	27.155	3	3669	0
Solidarity typology * Gender	0.998	0.833	9	8829.749	0.586
Solidarity typology * Education	0.994	1.187	18	10262.019	0.262
Solidarity typology * Partnership status	0.999	0.545	9	8829.749	0.843
Solidarity typology * Country	0.976	1.031	87	10856.224	0.402
Age 75 +					
Intercept	0.980	20.364	3	3019	0
Solidarity typology	0.979	7	9	7347.603	0
Country	0.773	27.068	30	8862.037	0
Partnership status	0.991	9.164	3	3019	0
Education	0.985	7.861	6	6038	0
Gender	0.985	15.396	3	3019	0
Solidarity typology * Gender	0.997	0.994	9	7245.386	0.442
Solidarity typology * Education	0.993	1.126	18	8420.713	0.318
Solidarity typology * Partnership status	0.996	1.386	9	7245.386	0.188
Solidarity typology * Country	0.967	1.129	90	8909.908	0.190

Results

Depression

There was a significant difference between the four family types $F(3) = 11.956$, $p<0.001$ in depression scores with Ascending familiasm families scoring highest (i.e. worse) on depression, followed by Autonomous and Supportive at distance families. Descending familiasm families had the lowest (best) depression score (Figure 4.1). Post hoc tests with the Scheffe procedure revealed that all pairwise comparisons were significant except for the comparison between Supportive at a distance versus Descending familiasm families. With respect to the remaining predictors, education was inversely associated with depression $F(2) = 28.928$, $p<0.01$, women scored higher (worse) than men $F(1) = 204.069$, $p<0.001$ as did the unpartnered respondents in comparison with the partnered $F(1) = 144.999$, $p<0.001$ and older respondents $F(2) = 49.392$, $p<0.001$. Spain was the country with the highest depression score; Austria and Denmark had the lowest scores $F(10) = 129.271$, $p<0.001$. We observed an interaction between the later-life family typology and education $F(6) = 3.459$, $p<0.05$. The observed inverse association between education and depression was altered within the Ascending familiasm and Supportive at distance groups, where the most educated participants scored equally (Ascending familiasm) or higher (Supportive at distance) on depression compared to participants with upper secondary educational qualifications.

Life satisfaction

There was a significant difference between the four family types in life satisfaction scores $F(3) = 18.176$, $p<0.001$. Consistent with the depression results, Ascending familiasm was associated with the lowest life satisfaction, followed by Autonomous families. The Descending familiasm family type had the highest life satisfaction score (see Figure 4.1). Post hoc tests with the Scheffe procedure revealed that the Autonomous and Ascending familiasm family types had a significantly lower life satisfaction score than Supportive at distance and Descending familiasm families. With respect to the remaining predictors, education was positively associated with life satisfaction $F(2) = 86.970$, $p<0.001$, men scored higher $F(2) = 10.359$, $p<0.001$ as well as younger respondents $F(2) = 148.052$, $p<0.001$ $F(2) = 30.731$, $p<0.001$. Denmark was the country with the highest life satisfaction score; Spain and Italy had the lowest scores $F(10) = 94.666$, $p<0.001$.

Somatic health

The four family types also differed significantly with regard to somatic health $F(3) = 32.166$, $p<0.001$. Ascending familiasm families reported the worst somatic health, followed by Autonomous families. Supportive at distance was the family type with the highest (best) score (see Figur 4.1). Post hoc tests with the Scheffe procedure revealed that except from the Descending familiasm versus Supportive at distance pairwise comparison, all other comparisons were significant. Furthermore, education was positively associated with somatic health $F(2) = 119.997$, $p<0.001$, men scored higher $F(1) = 32.683$, $p<0.001$ as did partnered respondents $F(2) = 34.423$, $p<0.001$; age was inversely associated with somatic health status $F(2) = 156.668$, $p<0.001$. Switzerland and Sweden were the countries with the best somatic health; Spain and Italy had the lowest scores $F(10) = 92.017$, $p<0.001$. There was a significant interaction between the late-life family typology and country of residence $F(30) = 1,639$ $p<0.05$. In Spain, Italy, Greece and Germany families of the Descending familiasm type had the highest score on somatic health rather than Supportive at distance families in all other countries.
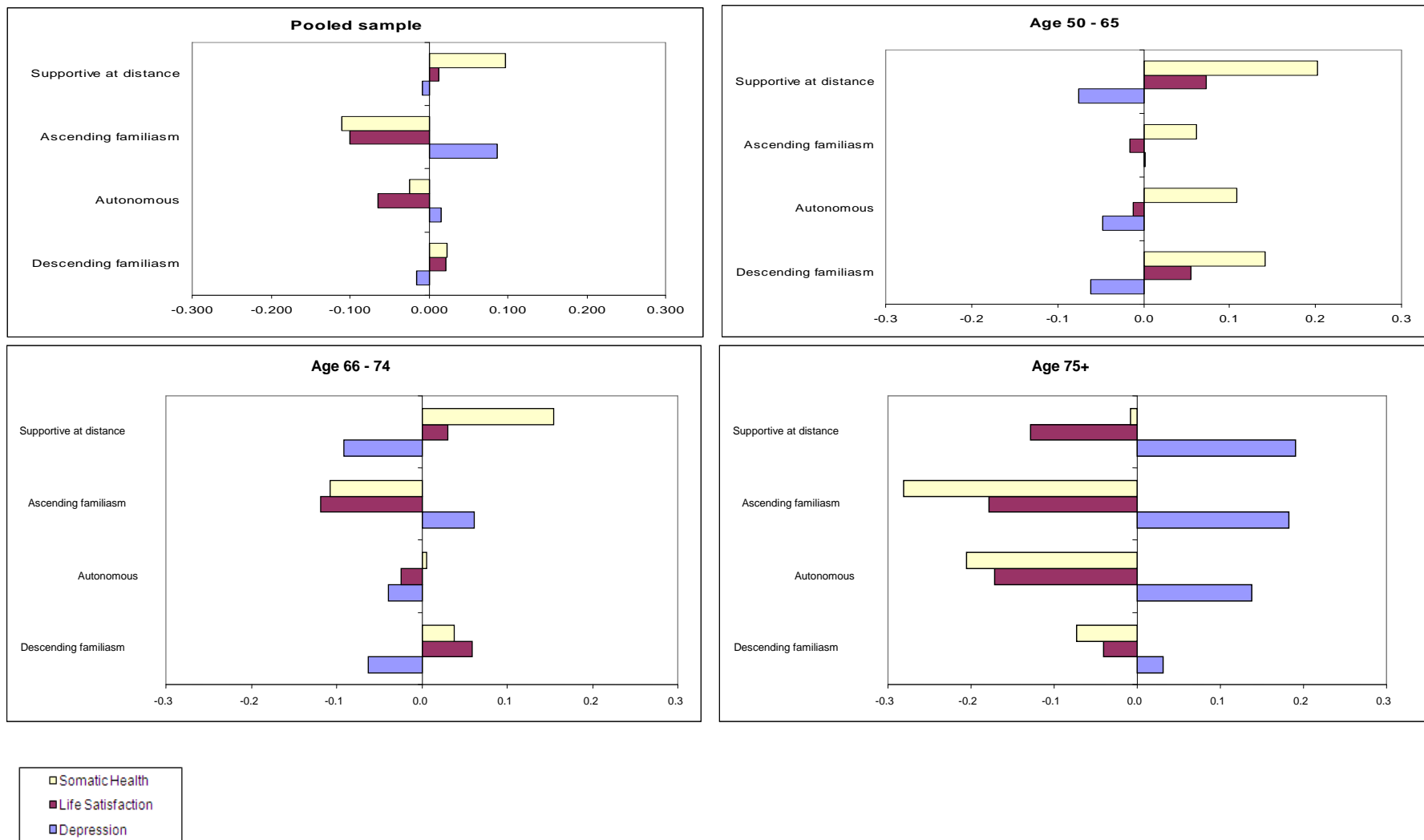
Figure 4.1. Estimated marginal means of depression, life satisfaction and somatic health scores with respect to late-life family type

Results by age group

We additionally conducted analyses stratified by age group in order to see whether the patterns of associations varied by age group, particularly in light of the differential exclusion of those in younger groups. In Figure 4.1 we present the estimated marginal means of the three health outcomes with respect to the late-life family typology as well as the remaining predictors from this stratified analysis. Supportive at distance and Descending familiasm family types had the lowest depression score in the 50-64 and 65-74 year old age groups, but in the 75+ age group, the Supportive at distance group had the highest score. Ascending familiasm had the highest depression score in the 50-64 and 65-74 groups, followed by the Autonomous group. With respect to life satisfaction Descending familiasm and Supportive at distance families received the highest score in all groups, whereas Autonomous and Ascending familiasm had the lowest life satisfaction scores. Finally, consistent with the pooled sample analysis, Supportive at distance and Descending familiasm families had the highest somatic health score in all age groups and Ascending familiasm the lowest.

Conclusion

The four late-life family types can be ordered with respect to the three health outcomes as follows: a) Descending familiasm; b) Supportive at distance; c) Autonomous; and d) Ascending familiasm. This pattern was also observed in the stratified by age group analysis, except in the 75+ group, where Supportive at distance families received the highest depression score.

Our results extend findings from previous studies (Mutran & Reitzes, 1984; Markides & Krause, 1985) in suggesting that older parents who receive help from children are in poorer health than those who provide help to children or are less engaged in help exchanges. While Descending familiasm was the late-life family type associated with best overall mental and physical health, Ascending familiasm was associated with the highest depression, lowest well-being and lowest somatic health scores. One reason for this may be that children respond to deteriorating parental health by providing help, in short the direction of the association is from parental health status to type of expressed solidarity rather than the reverse. However there may also be mechanisms whereby type of exchange influences health, particularly mental health. Reliance on children, for example, may result in reduced self-esteem associated with the loss of autonomy and physical and/or economic dependence in societies which place an emphasis on adult autonomy and independence.

The Supportive at distance group is the only family type where the association between late-life family solidarity differs for mental and somatic health, with this group exhibiting optimal somatic health, but sub optimal mental health, especially in the 75+ age group. Possibly lower levels of contact with children have a negative effect on their mental health, if so this would suggest the direction of the association is from solidarity type to health. The Autonomous group shows moderate somatic health and sub optimal mental health. Possibly too this indicates a negative consequence for mental health of lower intergenerational family solidarity. Finally, the optimal health status of the Descending familiasm group with respect to both somatic and mental health may reflect the previous health status of the members of this group, as well as the beneficial effects, in the form of social support, of offspring proximity and frequency of contact on mental health.

4.2. Intergenerational family solidarity and late-life loneliness[8]

Background
Intergenerational coresidence (i.e. adults living with their parents) is among the strategies that can be adopted to organize family solidarity, i.e. the exchange of practical help, economic maintenance, and the provision of emotional support. There are large variations across Europe in the rate of intergenerational coresidence, reflecting historical, cultural and socio-political differences (Billari, 2004; Hank, 2007; Saraceno, 2008; Tomassini et al., 2004a). The prevalence of coresidence of older parents with their children is lowest in the Scandinavian countries and the Netherlands, highest in the Mediterranean and South-East European countries, while intermediate levels are reported for Central Europe. Coresidence patterns provide little insight into the question of who is supporting whom. Most adults in coresidential arrangements have always lived with their parents.

The role of partners, non-coresident children and coresident children in alleviating loneliness in late-life is examined. Loneliness is the unpleasant experience that occurs when a person's network of relationships is felt to be deficient in some important way (De Jong Gierveld, 1987; Peplau & Perlman, 1982). An often-used definition of loneliness is that it involves an unwanted discrepancy between the relationships one has and the ones one would like to have (Perlman & Peplau, 1981). One hallmark of loneliness is that it is a subjective experience. A second is that it involves negative affect.

Family solidarity patterns in western Europe are generally described in terms of a gradient running from a more individualistic tradition in the north to a more collectivistic tradition in the south (e.g. Kalmijn & Saraceno, 2008). Given the higher levels of institutionalization and solitary living in countries with an individualistic tradition, it seems reasonable to suppose that levels of older adult loneliness are also higher there. The overall pattern of loneliness in western Europe appears to be that of a North–South divide, but one that is contrary to the general belief that older adults in individualistic countries are most lonely (Dykstra, 2009). Older adults in northern European countries, which are viewed as being most individualistic (Reher 1998) tend to be less lonely than older adults in southern European countries, which are viewed as being more strongly family-oriented.

Data and methods
Data on the prevalence of loneliness in former communist countries are rare. Compared to previous data collection efforts, the Generations and Gender Surveys (GGS) have the advantage that they include East European countries rather than focus only on Western Europe, and has information on exchanges with family members both in and outside the household (United Nations, 2005). In 2008, harmonized data were available for five countries. The GGS use a short version of the De Jong Gierveld loneliness measure (De Jong Gierveld & Van Tilburg, 2006) with scores ranging from 0, not lonely, to 6, severely lonely. Examples of scale items are: "I experience a general sense of emptiness", and "I miss having people around". The analyses, based on data from 60–79-year olds, involve a comparison between France, Germany, Russia, Bulgaria and Georgia. Mean loneliness

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levels are highest in the former communist countries. The means are 1.5, 1.5, 2.5, 3.1 and 3.8 for France, Germany, Russia, Bulgaria and Georgia, respectively.

Table 4.3 shows mean levels of loneliness by gender and living arrangement for the five countries. Four living arrangement categories were distinguished: living alone, living only with adult children, living only with a partner, and living with a partner and adult children. Adult children were aged 25 and up.

Table 4.3. Mean levels of loneliness by gender and living arrangement for selected European countries

Living arrangement	Alone		With adult children only		With partner only		With partner and adult children	
	Men	**Women**	**Men**	**Women**	**Men**	**Women**	**Men**	**Women**
France	2.1	2.0	0.0	1.3	1.3	1.3	1.3	1.8
Germany	2.6	2.2	0.0	1.9	1.4	1.4	1.1	1.2
Russia	3.5	3.1	2.2	2.9	2.3	2.2	2.4	2.1
Bulgaria	4.5	4.3	3.8	3.7	2.9	2.7	2.6	2.7
Georgia	4.8	4.6	3.7	3.8	3.7	3.9	3.3	3.1

Results

In each country, men living alone are generally more lonely than their female counterparts, a finding that has been reported repeatedly (Dykstra & De Jong Gierveld, 2004). For men, an exclusive relationship with a partner appears not only to be more focal to emotional well-being than is the case for women but also to play a pivotal role in their involvements with others. Given their strong orientation toward an exclusive partner relationship, men have greater difficulty finding fulfilment of their relational needs outside of marriage than women.

In France, Germany and Russia there is a gender difference among the unpartnered living with adult children: single men coresiding with adult children are generally less lonely than are women in those circumstances. Caution is advised here in interpreting the findings, given the small numbers of men in the respective countries coresiding with adult children only. Systematic gender differences do not emerge for the other living arrangement categories.

A consistent pattern across countries is that the partnered are less lonely than the unpartnered, underscoring the socially integrating role of marriage that was first described by Durkheim. Interestingly, coresidence with adult children also appears to protect against loneliness. Compared to those living on their own, unpartnered older adults who live with adult children only are less lonely. Among the partnered, having adult children in the household does not provide further protection against loneliness, except in Georgia, where the lowest loneliness scores are observed for older adults living with a partner and with adult children.

Additional analyses considered the role of non-coresident children, subjective health and financial circumstances. The findings are strikingly similar across countries. Older adults who see one or more of their non-coresident children at least weekly have relatively low loneliness scores, and this is particularly so for older adults in France and Germany. Older

adults who rate their health as poor are generally lonelier than those who consider their health to be good. A positive association between poor health and loneliness is often reported in the literature (De Jong Gierveld et al., 2006), but the direction of the association is not clear. It is conceivable that poor health imposes restrictions on social engagements, which in turn contribute to unwanted social isolation and loneliness. Alternatively, the possibility exists that a lack meaningful and close ties is a source of physical complaints. Finally, results show that older adults who have difficulty making ends meet are more likely to report loneliness.

Conclusion
Instead of examining the actual transactions in intergenerational family relationships, relatively straightforward indicators of family solidarity were used, such as co-residing with adult children and seeing adult children at least weekly. These proxy-like measures prove to be reliable and valid predictors of loneliness among older adults. Intergenerational coresidence and frequent face to face contact with adult offspring help to protect older adults from feeling lonely. As Buber and Engelhardt (2008) have stated frequent interactions with children are a sign of social connectedness, whereas infrequent contact is viewed as a sign of disinterest and lack of concern for one's older parents.

Policies aimed at improving the life conditions of older persons tend to focus on finances, housing, and health. The focus here has been on personal relationships—which have an impact on older adults' physical and mental well-being independently of potentially confounded factors such as socio-economic status, health-risk behaviours, use of health services, and personality (Uchino 2004).

The Generations and Gender Surveys (GGS) are unique in that data are also collected in former communist countries. Results show that older adults in those countries are lonelier than in western European countries. As yet, it is unclear how to explain the cross-national differences. Determinants of loneliness such as singlehood, living alone, limited contact with offspring, poor health, and financial difficulties, were strikingly similar in both West and East European countries. Apparently, explanations for cross-national differences in loneliness need to be sought in other factors. Walker (2005) has suggested that greater care be giving to older adults' expectations, standards and norms in cross-national comparative research on quality of life. He cautions that investigators should ensure that their models are grounded in lay perspectives, and not purely in theoretical constructions.

5. Normative beliefs and responsiveness to increasing parental needs[9]

Background and aim of the study

The increasing diversity and complexity of family ties has been accompanied by a shift in normative commitments. Processes of individualization, secularization and emancipation have brought about a shift from economic and instrumental interdependencies to a more affective orientation in families, with a greater emphasis on individual needs and personal happiness (Hareven, 1995; Lewis, 2001). Though relationships between parents and children are founded on a sense of obligation, there is considerable variation in expectations about what adult children should do for ageing parents (Finch & Mason, 1990; Gans & Silverstein, 2006). Filial support giving is increasingly individualized, subject to negotiation, and strongly dependent on the history of the parent-child relationship.

The purpose of the study was to examine the conditions under which norms of filial obligation motivate supportive behaviour. Following Silverstein et al. (2006), we argued that filial obligations are necessary but not sufficient conditions for upward intergenerational support. Our work was informed by two hypotheses. The *normative solidarity* hypothesis suggests that responsiveness to increasing parental needs is governed by norms of filial obligation. Adult children who strongly endorse such norms are most likely to respond to parental needs by providing support. The *individualization* hypothesis suggests that adult children do not respond to norms of filial obligation and that support giving to parents with increasing needs depends on the quality of the parent-child relationship. The better the quality of the relationship, the more likely adult children are to respond to parental needs by providing support. We addressed the following research questions. (1) Do norms of filial obligation motivate intergenerational support behaviour? (2) Is the quality of the parent-child relationship a stronger predictor of upward generational support than norms of filial obligation? (3) Is the responsiveness to norms of filial obligation greater in the event of increased parental needs?

The study focused on the Netherlands, a country with a well-developed system of formal care for the elderly, and which ranks high in terms of individualistic values. These characteristics make the Netherlands particularly interesting for studying the connection between norms of filial obligation and upward intergenerational support as norms reflect the cultural climate in which people live and are shaped by the generosity of welfare state provisions. Given its extensive public support system, Dutch adults have the option not to follow through on norms. Presumably then, support giving in the Netherlands is strongly individualized, implying that the quality of the parent-child relationship rather than norms of family obligation determine support giving.

Method
<u>Sample</u>
We used longitudinal (wave 1 in 2002-2004, wave 2 in 2006-2007) multi-actor data from the public release file of the Netherlands Kinship Panel Study, the Dutch participant in

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[9] This research has been carried out by Pearl Dykstra & Tineke Fokkema. It was presented at the International Association of Gerontology and Geriatrics (IAGG) conference, July 5-9, 2009, Paris. Work on the conference paper was carried out while the first author was a fellow at the Netherlands Institute for Advanced Studies in the Humanities and Social Sciences (NIAS) in Wassenaar.

the Generations and Gender Programme (Vikat et al., 2007). A sample of matched adult children and parents aged 50 and over was drawn from the main sample. The adult children were the primary respondents (anchors) taken from a random sample of private addresses in the Netherlands. In addition to computer-assisted face-to-face interviews, primary respondent data were collected by means of self-completion questionnaires. During the interviews, extensive information was gathered about the anchor's relationship with a maximum of eight family members (parents, siblings, children). Permission was asked to send self-completion questionnaires to, among others, one randomly selected biological or adoptive parent. We restricted our analyses to parents and children who were not living in the anchor's household to avoid patterns of support and contact being confounded with coresidence. The final sample contained 777 adult children and a randomly selected father ($N = 292$) or mother ($N = 485$).

Measures
Support is a sum score (range $0 - 10$) based on five items. Two kinds of instrumental support (helping in the household and with odd jobs), two kinds of emotional support (showing interest and giving advice), and financial support (a monetary or material gift of 500 euros or more) were assessed. The answer categories were 0 "not at all", 1 "once or twice", and 2 "several times" in the past three months.

Four items with response options ranging from 0 "strongly disagree" to 4 "strongly agree" were used to measure filial obligations (range $0 - 16$): "Children should look after their sick parents", "In old age, parents must be able to live in with their children", "Children who live close to their parents should visit them at least once a week", and "Children should take unpaid leave to look after their sick parents". These items were designed to assess general norms and not the expectation of one's own behaviour.

To assess relationship quality, children were asked: "How would you describe your relationship with your [father/mother]?". Answer categories varied from 0 "not great" to 3 "very good".

Responsiveness to increasing parental needs was indicated by widowhood and a decline in health between T1 (2002-2003) and T2 (2006-2007). Besides (the change in) parent's health and partner status, the following variables were included in the analyses: parent's past divorce experience and level of education, and child's age, gender, partner status and educational attainment.

Analyses
We carried out multiple regression analyses to predict the provision of support to ageing parents at T2. Given that mothers are more often recipients of intergenerational support than fathers, we performed the analyses for mothers and fathers separately. We controlled for the support level at T1, implying that the regression coefficients indicate change in support to parents over the intervening period (3 to 4 years). A positive coefficient indicates an increase in support, whereas a negative coefficient indicates a decrease in support. Model 1 incorporates the determinants of support giving. Model 2 incorporates interaction terms to test whether increased needs and child's gender moderate the conversion of normative beliefs into support.

Results

Table 5.1 shows unstandardized regression coefficients for predictors of Wave 2 support to ageing parents. Model 1 shows a positive association between Wave 1 support and Wave 2 support, suggesting stability of support provision over time. Adult children who more strongly endorsed filial norms provided increasingly more support to both fathers and mothers. Better relationship quality was linked to increasingly more support to fathers but not to mothers. Parents in poor health at Wave 1 received increasingly more support. A change in health status for the worse was also associated with increasingly more support. In general then, adult children respond to parents' decline in health by providing greater levels of support. Mothers who were single at both Wave 1 and Wave 2 or who were no longer partnered at Wave 2 received increasingly greater amounts of support. Fathers' partner status showed no associations with support from their adult children. Older children provided more support than younger children, a finding that is probably attributable to their having older parents with greater needs. Daughters provided increasingly more support to their fathers and mothers than did sons.

Interaction terms between filial obligations and parents' needs and child's gender were entered in Model 2. As the table shows, these interaction terms did not reach levels of significance in the data on support to fathers. Two interaction terms were significant in the data on support to mothers. Adult children who strongly endorsed filial norms were especially likely to provide increasing amounts of support to mothers in the absence of a decline in health. Furthermore, in providing support to mothers, daughters were less responsive to their normative beliefs than sons.

Conclusion

Our results show that, notwithstanding processes of individualization, secularization and emancipation in the Netherlands, upward intergenerational support is guided by norms of commitment to ageing parents. Adult children who more strongly endorsed norms of filial obligation provided higher levels of support to their fathers and mothers. This finding is in line with the normative solidarity hypothesis. Evidence in favour of the individualization hypothesis was visible only with regard to fathers. Relationship quality was a predictor of support to fathers but not to mothers.

Findings showed furthermore that the responsiveness to norms of filial obligation was less manifest in the event of a decline in mothers' health, and insensitive to a decline in fathers' health. Apparently, adult children respond to a generalized socially-shared expectation that mothers should be cared for in times of need. Results also indicated that single mothers received more support than partnered mothers. Among fathers, partner status made no difference in terms of the level of support. Taken together, the findings suggest a socially structured perception of mothers as more vulnerable than fathers. Apart from norms of filial obligation, relationship quality mattered for the provision of support to fathers. We conclude that supporting older fathers is more strongly individualized than supporting older mothers.

Table 5.1. Unstandardized regression coefficients predicting adult child's provision of support to non-coresident fathers (N = 292) and mothers (N = 485), in wave 2

	Fathers		Mothers	
	Model 1	**Model 2**	**Model 1**	**Model 2**
Upward support in wave 1 (low-high; child report)	0.52***	0.53***	0.45***	0.45***
Filial obligations norms in wave 1 (weak-strong; child report)	0.09*	0.07	0.07**	0.16**
Relationship quality in wave 1 (not great-very good; child report)	0.40**	0.40**	0.11	0.11
Parental health in wave 1 (good-bad; parent report)	0.48**	0.45**	0.35**	0.34**
Change in parental health between wave 1 and wave 2 (better-worse; parent report)	0.39*	0.90*	0.29*	1.09**
Parent unpartnered between wave 1 and wave 2 (ref=continuously partnered; child report)	-0.26	2.17	1.63***	3.11**
Parent partnered between wave 1 and wave 2 (ref=continuously partnered; child report)	-1.00	-0.88	-2.13	1.12
Parent unpartnered in wave 1 and wave 2 (ref=continuously partnered; child report)	0.05	0.62	0.52**	0.50
Parents ever divorced (child report)	-0.45	0.43	0.07	-0.10
Education of parent (low-high; child report)	0.12	0.13	0.09	0.08
Age of child (child report)	0.03*	0.03*	0.03*	0.02*
Daughter (child report)	0.49*	0.01	0.59***	1.49**
Child partnered (child report)	-0.39	-0.45	0.24	0.22
Education of child (low-high; child report)	0.08	0.07	-0.06	-0.06
Change in parental health * norms		-0.06		-0.11**
Parent unpartnered between wave 1 and 2 * norms		-0.32		-0.18
Parent partnered between wave 1 and 2 * norms				-0.46
Parent unpartnered in wave 1 and 2 * norms		-0.07		0.00
Parents ever divorced * norms		-0.10		0.02
Gender of child * norms		0.06		-0.12*
Adjusted R^2	0.297	0.301	0.312	0.324

*p < 0.05; **p < 0.01; ***p < 0.001.

Gender differences were not only visible in the parent generation. Daughters generally provided higher levels of support to their parents than sons. Findings showed furthermore that with regard to supporting their mothers but not with regard to supporting their fathers, daughters were less responsive than sons to norms of filial obligation. Apparently, norms of filial obligation have a stronger motivational component for sons than daughters. Sons seem to provide support to their mothers because they feel such behavior is expected of them. Daughters seem to be less sensitive to social prescriptions, perhaps because they take support provision for granted, are more likely to have organized their daily schedules to incorporate support giving tasks, or are intrinsically motivated. An appeal to social duties and responsibilities seems to work for sons.

6. Limitations and suggestions for future research

The activities of Workpackage 3 (Family relations and social integration) and part of the work undertaken within Workpackage 2 (Health conditions) of the MAGGIE research project have provided more insight into people's health and well-being at older ages. We did so by investigating the effect of family life histories (i.e., marital and fertility history) on later life health and well-being, its difference among men and women, and its variation between and within European countries. In addition, we examined the association between family solidarity and late-life health, and the role of norms of filial obligations in conjunction with the quality of the parent-child relationship in the event of increasing parental needs. Moreover, we considered different dimensions of health and well-being, in unison or simultaneously. However, some limitations of our research activities need to be addressed.

The report highlights a number of striking gender differences. Moreover, contrary to common belief, men's late-life health and well-being are also often affected by their marital and fertility histories, and in some cases even more than women. For instance, a greater negative effect of absence or loss of marriage was found on men's mortality. Husbands appeared to be more prone to poorer mental health related to family events, and early child birth was only related to a lower sense of control among men. In a similar vein, single men were more prone to loneliness than single women. Further research, however, is needed on the mechanisms behind the gender differences, and whether they are related to individual characteristics, cohort factors or larger macro environments (see Evenson & Simon, 2005; Hansen et al., 2009).

With the exception of the research on the role of norms of filial obligation in the provision of support to parents and investigation of marital history and later health (Chapters 1 and 5), cross-sectional data was used. Hence, it was not possible to disentangle the direction of the effects under study. Does initial mental health status influence for instance the timing of births and coresidence with children or do patterns of fertility histories and social support affect mental health in later life? Does previous parental health status affect the nature of family solidarity at older ages or is the direction of causality rather the reverse? Further investigation using longitudinal data is needed in order to aid interpretations on the causality of the reported associations.

Our analyses on the determinants and consequences of family solidarity (norms) excluded data on coresident adult children to avoid confounding patterns of contact and support with sharing the same household. The implication is of course that the circumstances of older men and women in multigenerational households are under exposed. Moreover, as rates of coresidence are higher in the Mediterranean countries than elsewhere in Europe (Hank 2007; Tomassini et al. 2004b), the identified family types across western Europe represent a larger portion of families in the Scandinavian and Continental countries than in the Mediterranean countries. Intergenerational coresidence was considered in the analyses of loneliness which included data from former communist countries. Greater attention needs to be given to intergenerational coresidence as a way of organizing family solidarity.

A further limitation of our research on family solidarity is the use of aggregate measures of adult children instead of using parent-child dyads as the analytical unit. As a result, variation among adult children was not considered. Previous work has shown that parents

do not interact with all their children equally often (Kalmijn & Dykstra, 2006). Differences between children in terms of the frequency of contact with their parents are greater in large families, divorced families, and when parents have reached an advanced age. Previous work has also shown that adult children make their behaviour contingent on their siblings' interactions with their parents (Van Gaalen et al., 2008). For example, children visit their parents less often if they have siblings who are geographically or emotionally closer to their parents than they are themselves. An interesting question for future cross-nationally comparative work is whether intra-family variability is greater in individualistic than in familialistic countries.

With regard to our cross-national research, we largely focused on differences and similarities among western European countries. This is regrettable as eastern European countries have witnessed more rapid and more dramatic demographic changes, are undergoing different socio-economic and political developments, and have different welfare systems from those in the rest of Europe (Fokkema & Esveldt, 2006). The second wave of SHARE and the Generation and Gender Surveys (GGS), covering several central and eastern countries, will make it possible to expand our analyses eastwards.

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