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The gap between births intended and births achieved in 22 European countries, 2004–07

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Using data from the 2004 and 2007 waves of the European Social Survey (ESS), we find that for every 100 births intended, about 60 births occur, on average, across 22 countries. This shortfall in fertility masks substantial heterogeneity between subgroups within the populations surveyed. Motherhood status, age, partnership status, and the strength of fertility intentions moderate the relationship between women's childbearing plans and births measured at the country level. Individual-level analyses using data from three countries included in the 2005 and 2008 waves of the Generations and Gender Survey are consistent with our country-level analyses. We demonstrate that repeat cross-sectional data can be used to analyse the correspondence between childbearing plans and births when longitudinal data are lacking.

Keywords: fertility; fertility intentions; low fertility; cross-national; European Social Survey; Generations and Gender Survey

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Over the past two decades, fertility trends in Europe have been a pressing concern for researchers and policymakers. 'Lowest low' fertility (total fertility rate below 1.3) emerged in the 1990s in Southern Europe then spread to a wide range of countries (Kohler et al. 2002; Morgan and Taylor 2006) and sustained levels of sub-replacement-level fertility precipitated concerns over ageing populations and soaring dependency ratios (Sleebos 2003; Kohler et al. 2006; Bloom et al. 2010). By 2013, however, fertility levels in many countries had begun to increase from their lowest points, and the current fertility landscape is heterogeneous, with some countries far along in their rebound toward replacement levels, other countries still bottoming out, and still others in between (Goldstein et al. 2009).

One narrative used to explain the low fertility levels seen in early twenty-first-century Europe is that of thwarted childbearing plans. Cross-sectional research has documented the persistence of a two-child family norm in most countries, even those in which the total fertility rate (TFR) is far below two (Goldstein et al. 2003). Researchers and policymakers have taken this as evidence of an unmet demand for children (Chesnais 2000). Although studies of intended family size and the TFR are informative, they have some inherent drawbacks. Researchers studying the correspondence between the family-size plans and completed fertility of a cohort face a long wait until all the families being studied are complete. In addition, a comparison of intended family size against a period TFR may be misleading because the TFR is subject to tempo distortions caused by postponement of childbearing. Here we argue that comparisons of childbearing plans and childbearing behaviour over the short term can provide useful and timely indicators of the fertility environments in which couples are operating. Further, we show how repeat cross-sectional data can be analysed at the population subgroup level to study the relationship between childbearing plans and childbearing behaviour across a wide range of settings.

We used data from two waves of the European Social Survey (ESS) for 22 European countries (European Social Survey 2008b) to assess whether, at the national level, women's childbearing plans corresponded to actual fertility behavior over a 3-year period. The ESS administered identical survey instruments in all 22 countries. The data collected allowed us to examine the correspondence between 'intended' and 'actual' births at the population level but the design of the ESS did not permit this relationship to be examined at the individual level.

Nevertheless, we argue that it is valuable to understand the correspondence between the proportion of a population planning a birth and the proportion of that population who have a birth, even in the absence of individual-level information on whether childbearing plans were achieved or went unrealized. In addition, we were able to analyse individual-level data for three countries and found a pattern of results consistent with those derived from the country-level ESS analysis.

The study reported here contributes to the fertility literature in three ways. First, because we compared short-term childbearing plans and births across 22 countries, we offer a broader comparison than is typical in previous research. Second, we are able to show the importance of taking into account maternity status, partnership status, age, and strength of fertility intentions when studying childbearing plans and behaviour. Considering each of these factors in turn, we report stark contrasts both across population subgroups and by the strength of the women's fertility intentions. Third, we show how researchers can extract additional knowledge from existing repeat cross-sectional surveys. In particular, we addressed fertility questions that are longitudinal in nature by transforming repeat cross-sectional data collected at the individual level into pseudo-panel data at the national level, and for population subgroups within nations. The lack of individual-level longitudinal data represents a serious barrier to research on childbearing plans and behaviour, both within individual countries and when undertaking international comparisons. Our supplementary analyses of individual-level, longitudinal data for three countries yielded results which were consistent with findings from our country-level analyses, reinforcing the argument that data from repeat cross-sectional surveys can be harnessed to fill the breach when individual-level longitudinal data are not available.

Background

Recent studies of desired or intended parity and completed fertility have found that women in Europe fall short of realizing their fertility intentions. In recent years, 'intended family size' has exceeded both completed cohort fertility (Bongaarts 2002) and the period TFR (Hagewen and Morgan 2005) in all countries except Germany, where 'intended parity' is unusually low. If women fall short of their intended family size this may signal an unmet demand for children and a failure to achieve a major life goal. However, women may modify their fertility plans and desires as they mature, as their personal circumstances change, and as social, economic, and policy conditions evolve over time (Iacovou and Tavares 2011). Studies of intended family size and completed fertility therefore cannot distinguish between women who modify their intended family size downward and those whose childbearing plans are not realized. Studies of lifetime fertility intentions have a further shortcoming: researchers have to wait 20 years or more to assess whether young adults will achieve their fertility intentions.

An alternative to the study of lifetime fertility intentions is to focus on fertility intentions and births over a short-term period. The study of short-term childbearing plans and behaviour has several advantages. First, they can be examined without a lengthy wait for lifetime fertility to be completed. Second, if childbearing plans and their outcome are considered within a narrow timeframe then the societal conditions influencing both the intentions and the births remain relatively stable (Philipov 2009); if couples fail to meet their short-term childbearing intentions this may be a good indicator of an inhospitable childbearing environment. While it is possible that the use of a narrow timeframe captures some births which have been delayed rather than forgone, past research suggests that such postponement inevitably leads to at least some decline in completed fertility at the population level (Kohler et al. 2002; Quesnel-Vallée and Morgan 2003).

Previous research also gives us reason to expect that childbearing plans will be more strongly related to subsequent childbearing behaviour in some groups than in others. Women who have already had children (hereafter 'mothers') may be more likely to follow through on their childbearing plans compared to women who have yet to bear a child (hereafter 'childless women') (Freedman et al. 1980; Schoen et al. 1999; Barber 2001; Spéder and Kapitány 2009). The transition to a first birth is arguably more momentous than the transition to a higher parity (Luker 1999), and childless women may be more easily deterred from following through on their plans (Sobotka et al. 2011). Mothers because they have experienced a birth, may be better able to assess whether their current situation is amenable to childbearing, and therefore their childbearing plans at a particular point in time may be a more reliable indicator of their future childbearing behaviour. In addition, women have preferences about the length of spacing between births, and if these are stronger than preferences for when to initiate childbearing, mothers will be more likely to stick to their timetable of births (Iacovou and

Tavares 2011). For these reasons, previous researchers have called for an analysis of fertility intentions by parity (Monnier 1987). By examining childbearing intentions in the short term, we can distinguish between the behaviour of mothers and childless women, which is not possible when researching lifetime intentions and completed fertility.

Furthermore, the analysis presented here differentiates between those women who 'definitely' intended to have a birth and those who 'probably' intended to do so. Previous research has often treated fertility intentions as a 'yes/no' dichotomy (Billari 2009); in studies that measure intended parity (e.g., Morgan and Rackin 2010) respondents are asked to indicate the number of children they intend to have without indicating the certainty of their plans. However, as research has shown, fertility intentions are not dichotomous and individuals are often uncertain about whether they wish to have a child in the future and about the total number of children they intend to have (Coombs 1974, 1979; Morgan 1981). This uncertainty could explain why researchers tend to find a large gap between fertility intentions and actual births achieved at the individual level (Quesnel-Vallée and Morgan 2003; Johnson-Hanks 2008; Morgan and Rackin 2010).

Age is also likely to influence the likelihood that a woman will fulfil her childbearing plans, but previous findings on this are mixed. On the one hand, younger women have more fecund years ahead of them and therefore a longer window of opportunity in which to achieve their desired parity (Rindfuss et al. 1988; Berrington 2004). If younger women with childbearing plans are more likely to postpone their implementation than older women with similar plans, then the relationship between childbearing plans and births achieved will be stronger for older women. Previous research has found that under certain conditions the correspondence between intentions and outcomes was indeed stronger for older women (Williams et al. 1999; Berrington 2004). On the other hand, there are several reasons why there may be a stronger aggregate-level correspondence between fertility intentions and actual births among younger women. First, sub-fecundity may reduce the chances of having a desired birth to a greater extent among older women than among younger women (Hendershot et al. 1982). Second, when women are analysed in groups determined by age and parity, as they were in our study, this may introduce a bias by selecting on unobserved characteristics related to fertility such as the underlying desire for children, the quality of relationship the women had with their partners, or the strength of competing interests, such as career opportunities (Rindfuss et al. 1988; Martin 2000; Berrington 2004). Becoming a mother at a young age may be associated with unmeasured characteristics that promote fertility, such as greater fecundity, a strong desire for children, or a reluctance to use contraception, all of which would act to strengthen the correspondence at the macro level between childbearing plans and births. Those who remain childless at older ages may be affected by characteristics that interfere with fertility goals, such as sterility, career ambition, or ambivalence about partners or parenthood, which would act to weaken the macro-level relationship between childbearing intentions and actual children borne (Rindfuss and Bumpass 1976). A third reason we might expect to see a higher aggregate-level correspondence between 'fertility intentions' and 'achieved fertility' among younger women than among older women is that unintended births are more common among younger women (Finer and Zolna 2011). In their study, Rindfuss et al. (1988) did find that it was more difficult to predict the number of births that older women would achieve than it was for younger women, consistent with the prediction that childbearing plans and births will be more closely related for younger than for older women.

Finally, we consider 'partnership status' as a potential factor influencing the likelihood that women will achieve their childbearing plans (Bongaarts 2001). Women without a reliable partner have to shoulder a combination of 'breadwinning' and 'childrearing' roles, increasing the costs associated with childbearing (Tienda and Glass 1985; Teachman et al. 2000). Women without a partner who report that they intend to have a birth in the next 3 years may hope that a partnership will develop first; and therefore some of these women will fail to have a birth because the desired partnership did not materialize. Previous research in the USA from the 1970s has shown that the realization of fertility intentions is higher among married women than among unmarried women (O'Connell and Rogers 1983). However, this research is dated, and the association between relationship status and fertility in Europe has changed dramatically over the past several decades (Kohler et al. 2006).

Data and methods

We used data from Wave 2 (which was conducted in 2004) and Wave 4 (2008) of the European Social Survey or ESS. In the discussion which follows, the two waves will be referred to as ESS-2 and ESS-4.

Data for both survey waves were available for the 22 European countries listed in Figures 1 and 2 and in Table A1. The ESS is a biennial social survey which measures the attitudes, values, and behaviours of Europeans from a comparative perspective. A core module of the survey provides general background information on the populations under study, while rotating modules are designed to investigate specific topics. In ESS-2, a rotating module on family, work, and well-being incorporated a question on fertility intentions. In ESS-4, recently born children could be identified because the individuals within a household were enumerated and their ages given.

For the 22 countries represented in both survey waves, we created a pseudo-panel at the macro level, focusing on women in ESS-2 who were 15–44 years old in 2004, and women in ESS-4 who were 4 years older, aged 19–48, in 2008. After excluding the 6 per cent of the sample for whom fertility intentions data were not recorded, our sample consisted of 21,237 women; 10,160 women in ESS-2 and 11,077 women in ESS-4. These women were further divided into two groups on the basis of their maternity status at Wave 2: 'childless women', who had not yet given birth, and 'mothers', who had already had at least one child. We thus had 44 groups differentiated by country and maternity status available for analysis. All cells in the country/maternity status matrix included at least 100 women—the smallest cell contained 133 women—and the average cell size was 241. Although our results are based on women in a broad age range, separate analyses of women aged 25–34 years in ESS-2 yielded results consistent with those we present.

The ESS-2 collected fertility intentions by asking women in 2004, 'Do you plan to have a child within the next three years?' It offered four response categories: 'probably yes', 'definitely yes', 'probably not', and 'definitely not'. The proportions of women giving each of these responses are shown by country and maternity status in Table A1. For our initial analyses we used a dichotomous indicator of intentions: if women responded 'definitely yes' or 'probably yes' they were coded '1', otherwise they were coded '0'. In later analyses, we distinguished between 'definitely' and 'probably planning to have a child'. In ESS-2, women who were pregnant at the time of the interview were coded as 'definitely intending to have a child'.

To assess the correspondence between fertility intentions and births at the macro level, we exploited the repeat cross-sectional design of the ESS. Using the data from ESS-2, collected in 2004, we calculated the proportion of women who intended to have a birth in the subsequent 3 years. We then compared this to the proportion of women in the same birth cohort who had a birth over approximately the same 3-year period, as reported in the data collected in 2008. Births were measured from enumerations of each household, which identified the biological children of the household head and indicated their ages. This approach does not identify young children not living with their mothers or who had died by the time of the survey. The babies of women pregnant at the time ESS-4 was conducted were not included in the count of births.

To supplement our macro-level analysis of the data from the ESS we used data from the Generations and Gender Survey (GGS). The GGS is a longitudinal survey addressing, among other topics, questions on fertility, partnership, employment, and the transition to adulthood. The GGS provides two waves of longitudinal data for three of the countries in the ESS sample—France, Germany, and the Netherlands. Wave 1 of the GGS (GGS-1) was undertaken in 2005 and the subjects were re-interviewed in a second wave of interviews (GGS-2) in 2008; these dates aligned well with those of the ESS. Our analysis of the GGS was restricted to women aged 15–44 in 2005, when GSS-1 was conducted, and who both returned valid answers about their fertility intentions over the next 3 years in GSS-1, and reported the number and dates of any subsequent births in GSS-2. Our sample from the GGS comprised 1,634 French women, 719 German women, and 1,453 women from the Netherlands.

To assess their short-term fertility intentions, GGS respondents were asked, 'Do you intend to have a/another child during the next three years?' The response categories in France and Germany were 'definitely not', 'probably not', 'probably yes', or 'definitely yes'. A small percentage of respondents, no more than 5 per cent, answered 'don't know' and were treated as having missing data. In the Netherlands, the response categories were either 'yes; I want children in the next three years', 'no; I want no more children', or 'no; I want children, but more than three years from now'. In 20 per cent of the cases from the Netherlands, the data on future childbearing plans were missing. For all three countries, women's short-term intentions, as reported in GSS-1, were dichotomized, with those intending to have a birth in the 3 years following GSS-1 being distinguished from those who did not intend to have a birth within that period. The number of births occurring in the interval between the two waves of the GGS was tallied from the birth dates of all biological children reported by women in GSS-2.

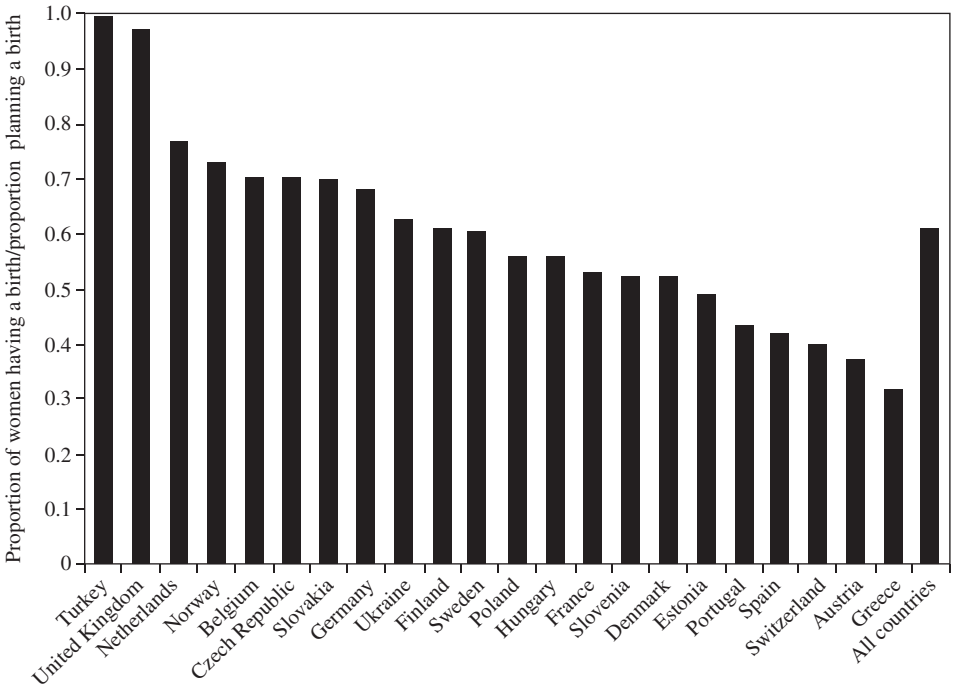

Figure 1 The aggregate fertility achievement rate by country for 22 European countries, 2004–07
Source: European Social Survey (ESS Round 2 and ESS Round 4).

The GGS data were used to evaluate the degree to which individuals were able to achieve their childbearing plans; the proportion of women who bore a child between GSS-1 and GSS-2 was compared to the number of women who had stated in GSS-1 that they intended to have a birth within the next 3 years. The individual 'fertility achievement rate' was calculated for all women aged 15–44 and for various subgroups. The individual fertility achievement rate is defined as the percentage of women who had a birth among those who planned to have a birth between 2005 and 2008. These individual-level analyses allowed us to evaluate the extent to which births were 'intended' rather than 'unintended'; whether they were borne by women who had stated in 2005 that they intended to have a birth in the next 3 years, rather than by women who had not intended to become parents. As a result, we are able to show that by examining fertility intentions and births at the national level in the ESS we can proxy individual-level dynamics reasonably well.

Results

First, we present results from the ESS data. Figure 1 plots the national-level fertility intentions against national-level birth rates over the same 3-year period for our sample of 22 countries. In the Figure the columns represent each country's 'aggregate fertility achievement rate', defined as the proportion of women in a country who bore a child between 2004 and 2007 divided by the proportion of women in that country who had, in 2004, expressed the intention to have a child in the next 3 years. The 'aggregate fertility achievement rate' measure should not be confused with the achievement of their own fertility intentions by individual women. The two waves of the ESS analysed distinct samples; the women having a birth between 2004 and 2007 were not necessarily the women who stated that they intended to have a birth when interviewed in 2004. Thus, the 'aggregate fertility achievement rate' for a country may be high because most individual women achieved their fertility intentions *or* because the number of individual women who had fewer children than they intended was offset by a similar number of women who had more children than they intended.

On average, the aggregate fertility achievement rate between 2004 and 2007 in the 22 countries was 61 per cent; that is, the proportion of women having a birth in this period was only 61 per cent as high as the proportion of women who stated that they intended to have a birth in the 3 years following the 2004 survey. In 20 of 22 countries, the proportion of women actually experiencing a birth fell short of the proportion of women who had been planning to have a child by a sizeable margin.

Turkey and the UK were the only exceptions to this general picture. In these two countries, the proportion of women who gave birth between 2004 and 2007 closely mirrored the proportion who had planned to have a birth over the same period, so the aggregate achievement rates for Turkey and the UK were both close to 100 per cent. Prior research has shown that in the UK, a high proportion of pregnancies are unplanned so it is likely that the correspondence between 'intended' and 'achieved' fertility at the aggregate, national level is the result of underachievers and overachievers offsetting each other at the individual level (Bury and Ngo 2009). Turkey is an outlier, rendered distinctive by the high levels of marriage and low levels of women's education in the population compared to the other countries in the sample, which means that the barriers to and costs of childbearing in Turkey are lower than in other countries (Gore and Carlson 2010; Population Reference Bureau 2011).

For most of the countries shown in Figure 1, the aggregate fertility achievement rates range from 50 to 70 per cent, with a mix of countries in Northern, Western, and Eastern Europe lying within this range. The three Southern European countries in the sample—Greece, Spain, and Portugal—along with Austria and Switzerland, had lower rates of between 32 and 44 per cent.

As mentioned above, aggregate achievement rates can be high if the number of women having more births than they intend approaches and offsets the number of women having fewer births than they intend. Based on calculations by Singh et al. (2010) for the year 2008, we estimated that 77–78 per cent of recent births in Northern, Western, and Southern Europe were intended, and that in Eastern Europe, where abortion rates tend to be quite high, 91 per cent of births were intended. We thus infer that the *individual-level* achievement rates in Northern, Western, and Southern Europe are about 0.77–0.78 times as high, on average, as the aggregate achievement rates, and that the individual-level achievement rates for Eastern Europe are about 0.91 times as high as the aggregate achievement rates. (The ESS data use women as the unit of analysis, while the Singh et al. data use births as the unit of analysis. Therefore, in order to conduct this exercise, we assumed a one-to-one correspondence between births and women.) Applying the unintended birth rate for the European region in which it lies to each of the 22 countries, we estimate that the individual-level fertility achievement rate aggregated across all 22 of the European countries in our sample is approximately 50 per cent (calculated as the aggregate achievement rate of 61 per cent * the 0.80 average proportion of births intended across all the countries), which means that about half of women who intended a birth over the 3-year period had one during that period.

We do not have estimates of unintended births for all 22 individual countries in our sample, but acknowledge that variations between countries in the proportion of births which were unintended will contribute to the observed variations in 'aggregate achievement rates'. Our supplementary analysis of data from the GGS (not shown) found that the proportion of births that were unintended matched the Western European average in the Netherlands (where 22 per cent of births were unintended), fell below it in France (17 per cent), and rose above it in Germany (26 per cent). We do not have country-specific data on unintended births for the other 19 sample countries.

Figure 2 shows the proportion of women in each of the 22 countries who reported in 2004 that they were intending to have a birth in the next 3 years alongside the proportion of women who had a birth during that period. The countries are grouped into those with a TFR of more than 1.6 children per woman and those with a TFR of less than 1.6. In Figure 2, each of the groups is arranged along the *x*-axis in descending order of TFR. Among the countries with the higher TFRs, France, Estonia, and Denmark stand out as having particularly large gaps between the proportion of their women intending to have a birth and the proportion who had a birth. In these three countries, fertility levels are relatively favourable from a societal perspective (meaning that TFR is not far below replacement level), yet the proportion of women planning a birth far exceeds the proportion that give birth in the short term. Because average intended parity is close to two in most European countries, there is a temptation to think that if TFR is also close to two, individuals are meeting their intentions. The findings for these three countries tell us that even though a population may have fertility not far short of replacement level (TFR of 2.1), this does not necessarily mean that individual women are achieving their own fertility goals. Fertility may be near replacement level in these countries, yet the data imply that there is an unmet demand for children.

The countries with the five lowest aggregate achievement rates in Figure 1 (Greece, Austria, Switzerland, Spain, and Portugal) also have TFRs that are relatively low for Europe (below 1.4 in Greece, Spain, and Portugal, 1.46 in Switzerland, and 1.38 in Austria). Previous research attributed

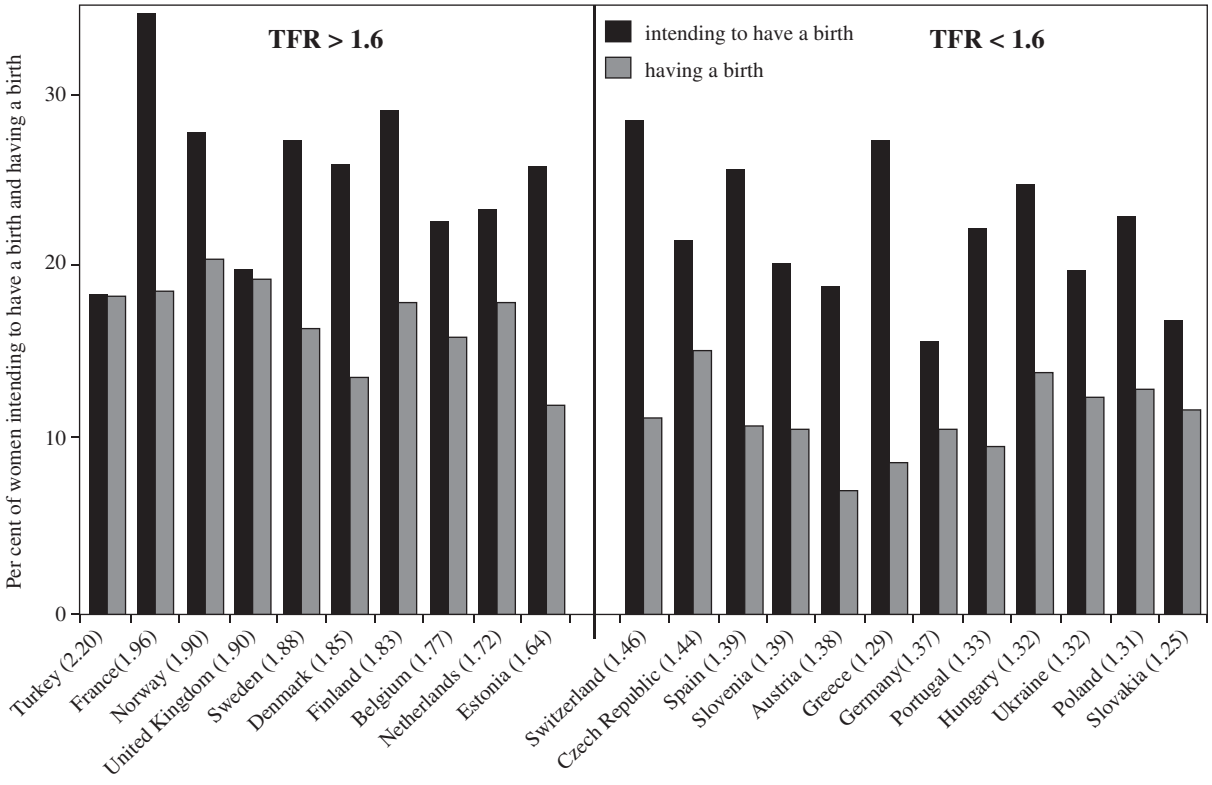

Figure 2 The percentage of women aged 15–44 years intending to have a birth and having a birth for 22 European countries, 2004–07, by country and total fertility rate (TFR) in 2007. (TFR for each country is given in parentheses on *x*-axis)
Source: European Social Survey (ESS Round 2 and ESS Round 4) and Eurostat.

low fertility in Southern Europe to the challenges women face when trying to combine work and family and to a lack of gender equity in the division of household labour (McDonald 2000; Esping-Andersen 2009). Our findings suggest that the inhospitable childbearing environment in most of the countries in this region influences births more than the intention to have them. The proportion of women who planned to have a child was relatively high in the Southern European countries shown in Figure 2, but the proportion who had a birth was low. Switzerland, though not typically grouped with the Southern European countries, follows the same pattern, having one of the largest gaps between the proportion intending to have a birth and the proportion having one. Like the Southern European countries, Switzerland lacks extensive public support for childrearing, although the level of support varies considerably across Swiss cantons (Bonoli 2008; Thévenon 2011).

For other low-TFR countries, most notably Slovakia and Germany, the fertility achievement rates shown in Figure 1 are relatively high, at around 70 per cent. Figure 2 shows that the low fertility levels in Slovakia and Germany are driven by the very low proportions of women who intended to have a birth. Ukraine and the Czech Republic follow a similar pattern: relatively low TFRs, relatively low proportions of women intending to have a birth, and relatively small gaps between the proportion of women intending to have a birth and the proportion having one. Unlike Southern Europe, where there is an unmet demand for children, it would appear that in Slovakia, Germany, Ukraine, and the Czech Republic the demand for children is relatively low.

Austria stands out among the 22 countries as having both a low proportion of women who intended to have a birth in the short term, and a low aggregate fertility achievement rate. A smaller proportion of Austrian women were planning to have a child in the 3 years after the 2004 ESS-2 survey than in any other country. Even so, the proportion of Austrian women who had a birth within that period fell well short of the small proportion who had been planning to have a birth. In the Austrian case, therefore, the low number of intended births was compounded by a low aggregate fertility achievement rate, placing the country in the 'Low TFR' group.

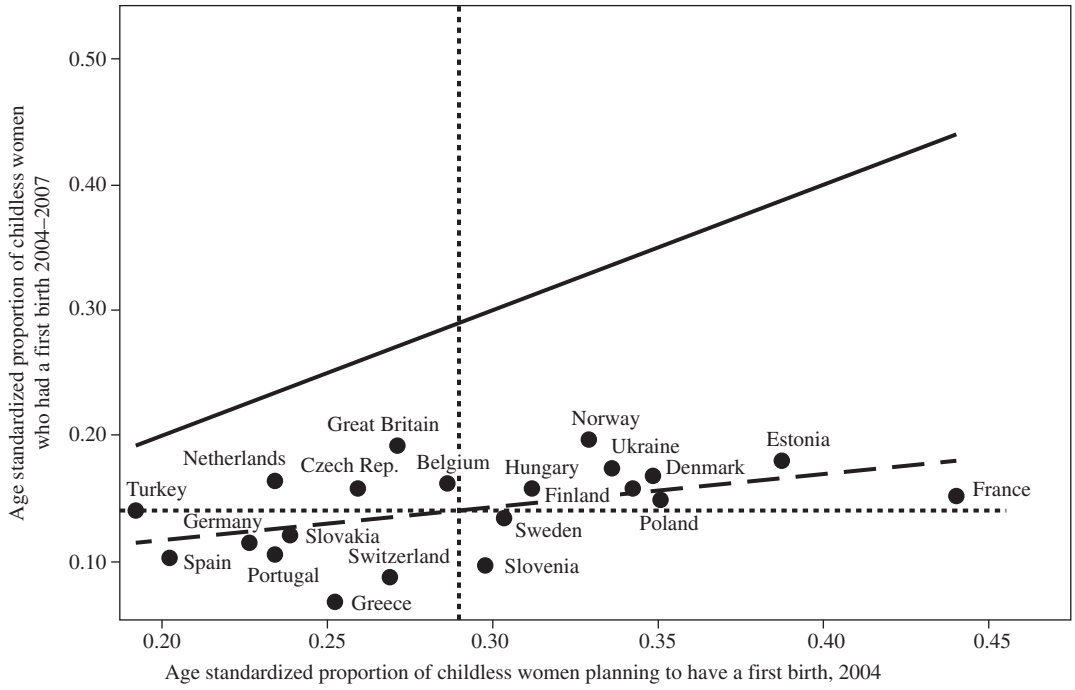

Figure 3 The proportion of childless women aged 15–44 years who had a first birth plotted against the proportion of childless women who were planning to have a birth for 22 European countries, 2004–07
Source: European Social Survey (ESS Round 2 and ESS Round 4).
Note: Points represent 22 European countries. Solid line is $X = Y$ diagonal. Dashed line is fitted line. Dotted lines show the proportions averaged across all 22 countries.

Figures 3 and 4 display age-standardized scatter plots of the proportion of women intending to have a birth along the *x*-axis and the proportion who had a birth between 2004 and 2007 along the *y*-axis for women who were childless in 2004 and those who were already mothers at that date, respectively. Data points above the solid diagonal line represent countries in which the proportion of women having a birth exceeded the proportion intending to have one, and data points below this diagonal represent countries in which births fell short of intentions. The dotted horizontal and vertical lines show, respectively, the proportion of women who had a birth and the proportion who intended to have birth averaged across the 22 countries.

Figure 3 shows that, for childless women, the proportion having a child fell well short of the proportion who had intended to have one in all 22 countries. The proportion of childless women who intended to have a child within 3 years ranged from just 19 per cent in Turkey to, at the other extreme, 44 per cent in France. In fact, across all 22 countries only 7–20 per cent of childless women had a birth during the 3-year period following the ESS-2 survey. The underachievement of fertility intentions by childless women at the aggregate level is not surprising, but the large magnitude of the gap between their fertility intentions and their actual fertility is striking. If the percentages are averaged across the 22 countries, 29 per cent of childless women were planning to have a birth in 2004 but only 14 per cent of women who had been childless in 2004 gave birth between 2004 and 2007, a shortfall of 15 percentage points. Only in Norway, the Netherlands, and Turkey did the proportion of childless women who had a birth exceed 70 per cent of the proportion of this group who had intended to become mothers.

We expected that childbearing plans would be more closely related to actual fertility for mothers than for childless women, and we found this to be the case (see Figure 4). In all countries, the shortfall of births compared with childbearing plans, was smaller among mothers than among childless women. Between 10 and 26 per cent of mothers in 2004 intended to have another birth in the ensuing 3 years, and between 6 and 22 per cent of women who were already mothers in 2004 did so. The proportion of mothers giving birth between 2004 and 2007 exceeded the proportion who had intended to give

birth over that period in four countries: the UK, Turkey, the Czech Republic, and Belgium. In most countries, the proportion of mothers giving birth between 2004 and 2007 fell short of the proportion who intended to have one by a relatively small margin of 5 or fewer percentage points. However, this gap was larger, at 6–7 percentage points, in Austria, Greece, and Portugal and 9–10 percentage points in Denmark, Estonia, and Spain. The shortfalls in Southern European countries are in line with our expectations, but the shortfalls in Austria and Denmark are more surprising.

Next, we regressed the proportion of women having a birth against the proportion who had planned to have a birth in 22 countries. Only women aged 15–44 were considered and the results are again presented separately for women who were childless and those who were already mothers in 2004. In Table 1, Model 1 for each set of women shows the average relationship between the proportion of women intending to have a birth and the proportion having a birth across the 22 countries, summarizing the information from Figures 3 and 4. Models 2 and 3 incorporate variables representing the strength of a woman's intention to have a child and her partnership status.

Table 1 shows that among mothers the proportion of women planning a birth was positively related to the proportion who had a birth, but that this was not true for childless women. The coefficient for the variable *proportion planning a birth* suggests that, on average, among mothers each 0.10 point increase in the proportion planning to have a birth was associated with a 0.06 point increase in the proportion who had a birth. For the childless women each 0.10 point increase in the number of women who planned to have a child was associated with a statistically insignificant 0.02 point increase in the proportion who had a birth. In simpler terms: at the aggregate level, the proportion of women who planned to have a child was related to the proportion who gave birth among mothers, but not among childless women.

In Model 2, we demonstrate that the distinction between 'definitely' and 'probably' planning a birth was an important one for mothers. Among mothers, the relationship between the proportion with 'definite' plans and the proportion who had a birth approached a one-to-one correspondence: the

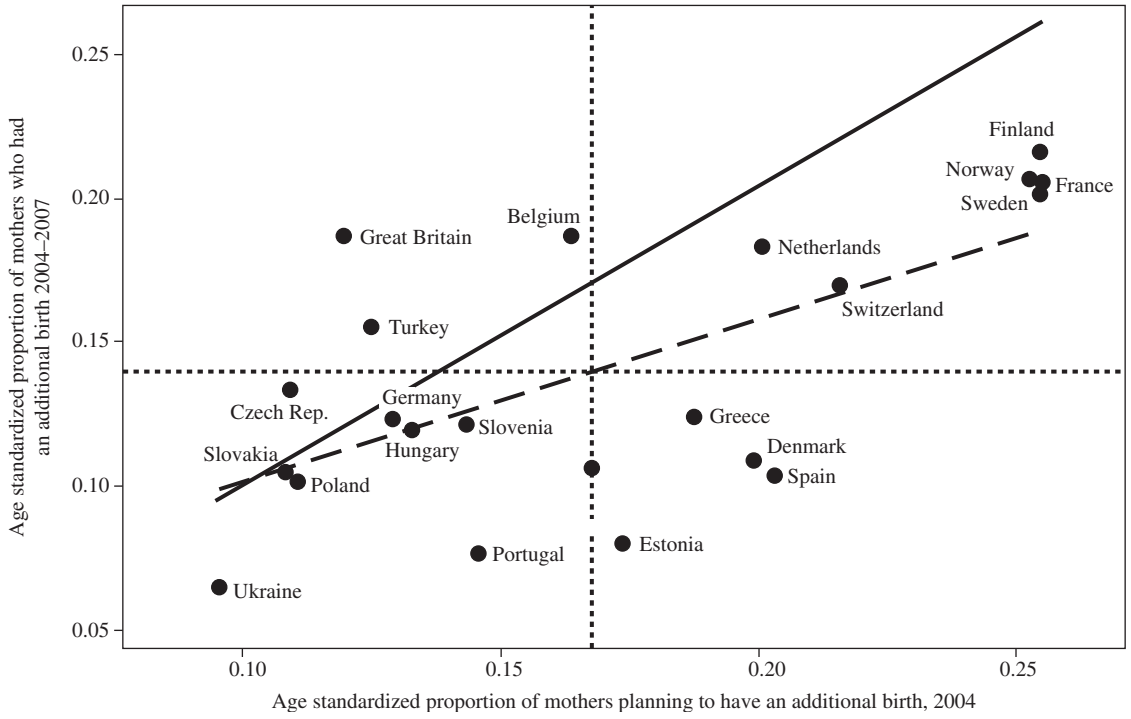

Figure 4 The proportion of mothers aged 15–44 years who had an additional birth plotted against the proportion of mothers who intended to have an additional birth for 22 European countries 2004–07
Source: European Social Survey (ESS Round 2 and ESS Round 4).
Note: Points represent 22 European countries. Solid line is $X = Y$ diagonal. Dashed line is fitted line. Dotted lines show the proportions averaged across all 22 countries.

Table 1 The proportion of women aged 15–44 years who had a birth regressed on the proportion of women with childbearing plans for 22 European countries, 2004–07, by maternity status

	Childless women			Mothers	
	Model 1	Model 2	Model 3	Model 1	Model 2
Proportion planning birth	0.22			0.59**	
	(1.64)			(3.15)	
Proportion definitely planning a birth		0.26			1.08***
		(1.11)			(4.10)
Proportion probably planning a birth		0.16			0.09
		(0.57)			(0.32)
Proportion planning a birth and living with a partner			0.55**		
			(3.05)		
Proportion planning a birth and not living with partner			−0.07		
			(−0.40)		
Average age	−0.01	−0.01	−0.01*	−0.02	−0.01
	(−1.33)	(−1.11)	(−2.33)	(−2.02)	(−1.82)
Constant	0.24	0.23	0.35**	0.59*	0.49
	(1.98)	(1.82)	(3.03)	(2.18)	(2.02)

***$p < 0.001$; **$p < 0.01$; *$p < 0.05$.
Source: European Social Survey (ESS Round 2 and ESS Round 4).

coefficient for the variable *proportion definitely planning a birth* was 1.08. There was essentially no relationship between the *proportion probably planning a birth* and the proportion having a birth. Among childless women, interestingly, even the proportion with definite childbearing plans was not significantly related to the proportion who had a first birth.

The results so far suggest that knowing the proportion of childless women who are 'definitely planning' or 'probably planning' a birth in the next 3 years conveys little information about the proportion of childless women who will give birth over that period. Why is the proportion of childless women with childbearing plans unrelated to the proportion of childless women who give birth at the country level? One possibility is that childless women lacked an available partner, a circumstance that interfered with their ability to follow through on their plans. Although in all 22 countries the great majority of mothers were married, or living with their partner, the proportion of childless women living with a partner was far lower and varied more widely from one country to another. In the 22 sample countries, between 7 and 35 per cent of childless women were living with a spouse or a partner. If the availability of a partner is important for a woman to achieve her childbearing plans, we can predict that the proportion of childless women *with a partner* who were planning a birth will be related to the proportion who had a birth in the following 3 years, whereas the childbearing plans of childless women without a partner will not be related to the proportion who gave birth. Model 3 confirms this prediction. Each 0.10 point increase in the proportion of childless women who had a partner and were planning a birth was associated with a 0.06 point increase in the proportion of childless women who gave birth.

The above results were based on women drawn from across the 15–44 age range. When, in separate analyses, we restricted our sample to childless women and mothers between the ages of 25 and 34, the pattern of results was entirely consistent with the results for the 15–44 year olds.

The aggregate-level relationship between childbearing plans and births may differ between younger and older women, and therefore Table 2 examines the relationship between childbearing plans and achieved births among women aged less than 30 and, separately, among those aged 30 or more. The results shown in Table 2 make it clear that the *proportion planning a birth* was more strongly related to the proportion who had a birth among younger women than it was among older women. This pattern holds true for both childless women and mothers. Although younger women may be more prone to unintended pregnancies, it is unlikely that this accounts for the greater strength of the relationship among the younger women. Unintended pregnancies may decrease the gap between childbearing plans and subsequent births at an aggregate level, but unintended births simply add noise when a regression procedure is used to estimate the average relationship between childbearing plans and births across a range of countries. Rather, the age pattern visible in the results is consistent with two hypotheses:

Table 2 The proportion of women aged 15–44 years who had a birth regressed on the proportion of women with childbearing plans in 22 European countries, 2004–07, by maternity status and age group

	Childless women			Mothers	
	Model 1	Model 2	Model 3	Model 1	Model 2
Less than 30 years old					
Proportion planning birth	0.34**			0.74**	
	(3.00)			(3.66)	
Proportion definitely planning a birth		0.50*			0.91**
		(2.36)			(3.22)
Proportion probably planning a birth		0.15			0.50
		(0.63)			(1.51)
Proportion planning a birth and living with a partner			0.53**		
			(3.32)		
Proportion planning a birth and not living with partner			0.06		
			(0.36)		
Average age	−0.02	−0.02	−0.03*	−0.04	−0.03
	(−1.90)	(−1.57)	(−2.42)	(−1.24)	(−1.01)
Constant	0.49	0.44	0.64*	0.981	0.846
	(2.14)	(1.88)	(2.72)	(1.34)	(1.13)
30 years and older					
Proportion planning birth	−0.07			0.24	
	(−0.35)			(1.37)	
Proportion definitely planning a birth		0.22			0.69*
		(0.83)			(2.75)
Proportion probably planning a birth		−0.24			−0.15
		(−1.09)			(−0.66)
Proportion planning a birth and living with a partner			0.29		
			(0.84)		
Proportion planning a birth and not living with partner			−0.11		
			(−0.46)		
Average age	−0.03	−0.02	−0.02	0.00	−0.01
	(−1.35)	(−0.81)	(−0.73)	(−0.18)	(−0.46)
Constant	1.34	0.871	0.78	0.16	0.29
	(1.47)	(0.95)	(0.80)	(0.30)	(0.60)

***$p < 0.001$; **$p < 0.01$; *$p < 0.05$.
Source: European Social Survey (ESS Round 2 and ESS Round 4).

either the greater fecundability of younger women makes it easier for them to achieve their childbearing plans, or the pro-natal characteristics of young mothers make them more likely to give birth, while older childless women have characteristics that interfere with the achievement of their childbearing plans.

The analyses thus far were undertaken using country-level data from the ESS. With these data we were unable to report on the correspondence between childbearing plans and ensuing births for individuals. Table 3 presents results from individual-level analyses of childbearing intentions and achieved fertility for the three countries for which we have data from the GGS—France, Germany, and the Netherlands. The story told by the individual-level data is largely consistent with the findings of our macro-level analyses.

The ESS analysis showed that childbearing plans were related to subsequent births among mothers but not among childless women at the country level, and this same pattern appears using data from the GGS at the individual level. In France, the individual-level fertility achievement rate was 61 per cent (meaning that 61 per cent of mothers who intended to have a further birth had one). Among childless women the equivalent figure was 42 per cent. In Germany, the individual-level achievement rate was 63 per cent among women who were already mothers and 52 per cent for women who had not yet had children. In the Netherlands, the figures were, respectively, 70 and 59 per cent. In each of the three countries, as in the ESS data, the proportion of mothers who planned to bear another child was substantially lower than the proportion of childless women who were planning a birth, a difference which could have contributed to the higher achievement rates among the mothers in both the aggregate and the individual-level analyses.

Table 3 Individual-level analysis of women's short-term fertility intentions and births, 2005–08, in France, Germany, and the Netherlands

	Percentage of women planning a birth	Percentage of women who had a birth (planned or unplanned)	Individual-level achievement rate[1] (%)	*N*
France				
Mothers, 15–44 years old	24	18	61	954
Mothers, less than 30 years old	64	63	82	101
Mothers, 30 years or older	19	12	52	893
Childless women, 15–44 years old	41	21	42	649
Living with partner	65	42	60	204
Not living with partner	29	11	22	445
Childless, less than 30 years old	36	23	51	458
Childless, 30 years or older	57	15	24	191
Germany				
Mothers, 15–44 years old	16	15	63	577
Mothers, less than 30 years old	34	36	77	61
Mothers, 30 years or older	11	13	57	509
Childless women, 15–44 years old	38	22	52	142
Living with partner	68	38	55	60
Not living with partner	18	12	40	89
Childless, less than 30 years old	39	24	54	81
Childless, 30 years or older	36	19	43	68
Netherlands				
Mothers, 15–44 years old	21	17	70	912
Mothers, less than 30 years old	70	58	72	66
Mothers, 30 years or older	16	13	70	846
Childless women, 15–44 years old	31	25	59	541
Living with partner	51	44	70	244
Not living with partner	16	12	35	297
Childless, less than 30 years old	26	23	55	288
Childless, 30 years or older	42	31	64	253

[1]The individual-level achievement rate is the percentage of women who had a birth among those who planned to have a birth.
Source: Data from Generations and Gender Survey, Wave 1 (2005) and Wave 2 (2008).

The analysis using the country-level data from the ESS had shown that partnership status was important for childless women, and the individual-level analysis of the GGS provides further evidence to support this. In France and the Netherlands, among childless women planning a birth, those living with a partner were 2 to 3 times more likely to achieve that birth than those not living with a partner. In Germany, childless women with partners were also more likely to achieve their childbearing plans than were childless women without a partner although the gap between the two was not as large as in the other two countries. In all three countries, the proportion of childless women with a partner who were planning a birth was more than twice as high as the proportion of childless women without a partner. Childless women with a partner thus had higher fertility achievement rates, even though the proportion with childbearing plans was quite high and therefore more difficult to achieve.

The ESS data showed that, when national-level figures were considered, the relationship between childbearing plans and births was stronger among younger women than older women. The results of our analysis of the individual-level data from the GGS for France and Germany are consistent with

this picture, but this was not the case for the data for the Netherlands. In France and Germany, the individual-level fertility achievement rates among both mothers and childless women under the age of 30 were indeed higher than the achievement rates for older mothers and childless women. For younger mothers in the two countries, their achievement rates were higher, even though the proportion with childbearing plans was much higher than that among the older mothers. In the Netherlands, the age pattern was different: both younger mothers and older mothers had similarly high fertility achievement rates and younger childless women had a slightly lower achievement rate than childless women in the older age group. On examination of the ESS data for the Netherlands we found the same pattern. The GGS and ESS data thus show consistent patterns, and both indicate that the Netherlands was an exception to the general tendency for childbearing plans and achieved births among younger women to correspond more closely than they did among women who were older.

Discussion

Using data from separate waves of the ESS conducted in 2004 and 2008, we found evidence to support the argument that women in Europe in the first decade of the twenty-first century were not having the children they would like to have, when they would like to have them. Overall, in 20 out of the 22 European countries studied, the proportion of women with short-term childbearing plans far exceeded the proportion who gave birth in the ensuing 3 years. However, and importantly, our research also suggests that fertility intentions are not all alike and therefore the outcome of women's childbearing plans can be more meaningfully understood when the maternity status, partnership status, and age of the women reporting their childbearing plans are taken into account in addition to the strength of their fertility intentions. One clear example is the contrast between childless women without a partner and mothers. For childless women without a partner, the proportion intending a birth is unrelated to the proportion having a birth, and childbearing plans are more noise than signal. For mothers, in contrast, the proportion planning a child is strongly related to the proportion having a birth, and, for these women, childbearing plans are informative.

Much previous research on the correspondence between childbearing intentions and actual births relies on intended parity and fails to distinguish between mothers and childless women, but when we distinguish between these two groups starkly divergent patterns emerge. This contrast suggests that either women who are already mothers are better at predicting their future fertility than women who have not yet had a child or that they have stronger incentives to have a child within the 3-year window under observation. The incentives for mothers to have a child within the 3 years might be related to a preference for closely spacing siblings or to the desire to minimize the length of time parents are faced with the challenges of raising very young children. Whatever the reason, aggregating mothers and childless women together when analysing the relationship between childbearing plans and births conceals substantial heterogeneity between these two groups.

Postponement of childbearing to older ages is a well-documented trend that has contributed to low fertility in Europe since the late 1990s (Kohler et al. 2002). It was thus surprising when, using national-level data, our analyses found that childbearing plans were more strongly related to childbearing behaviour among younger women than among older women. Our analyses at the individual level also found that younger women were more likely to achieve their childbearing plans than older women were. Since older women have less time available in which to recoup any births which they may have forgone in the short term, it is likely that the unrealized intentions of the older cohort of European women in our study will depress the quantum, and not just the tempo, of childbearing.

Our study has revealed considerable heterogeneity in women's childbearing plans across low-fertility countries within Europe. In Southern Europe and Switzerland, women's achieved fertility was, on average, far short of their fertility intentions. This set of countries seems to fit the well-worn narrative that low fertility is the result of thwarted fertility intentions. However, Slovakia, Germany, Estonia, and the Czech Republic depart from the 'unrealized intentions' narrative: in these countries, at the aggregate level, the correspondence between fertility intentions and actual births was relatively high but the proportion of women intending to have a child in the short term was relatively low.

We suggest that the contribution of low fertility intentions to low fertility outcomes has not been fully appreciated. Previous research has emphasized the role that the failure to achieve childbearing intentions plays in producing low fertility (Bongaarts 2002; Hagewen and Morgan 2005; Morgan and

Rackin 2010). However, because earlier research documented a near universal two-child family norm (Bongaarts 2002), less attention has been paid to how a low proportion of women intending to have a birth may be driving low fertility. Previous research identified Austria and Germany as distinctive within Europe because of the relatively high proportions of women in these countries who reported that their ideal and intended number of children was one or, to a lesser extent, zero (Goldstein et al. 2003). More recent research, using 2006 Eurobarometer data for a larger set of countries found that Spain, Italy, Slovakia, the Czech Republic, and Malta were also emerging as countries where the average intended family size was less than two (Testa 2007). Goldstein and Testa focused on lifetime intentions in their research, whereas we have focused on intentions over the short term. Nevertheless, in both approaches, the emerging picture is one in which a growing set of countries, some German-speaking, such as Germany and Austria, and others lying in Central and Eastern European, such as Slovakia and the Czech Republic, have both sub-replacement intended family sizes and a relatively low proportion of women intending to have a birth in the near term.

Our findings indicate the importance of taking into account the strength of fertility intentions. We find that the proportion of women who were not definite about their fertility intentions—those who reported they were 'probably' intending to have a birth—was not associated with the level of subsequent births. Recent cross-national research found that women in a particular country who were undecided about whether to have an additional birth went on to have fertility outcomes similar to those of the majority of women in that country (Becker and Sutradhar 2007). If we assume a similar pattern for the women in our study, women whose fertility intentions were not definite would be expected to follow the majority of the population within their countries who did not proceed to have a birth within the short period under observation.

Our results agree with previous research in finding that women's personal fertility intentions are not dichotomous or deterministic, but rather exist on a continuum that includes strong, ambivalent, and weak intentions and are also contingent on personal circumstances, such as finances and relationship status, that are subject to change. Although this fact is frequently acknowledged, it has not been fully integrated into theoretical or empirical work such as Bongaarts' (2001) decomposition of the gap between the TFR and desired family size. The literature on fertility intentions suggests that, in general, individuals fail to achieve their intentions, most commonly because they have fewer births than they intended (Quesnel-Vallée and Morgan 2003; Morgan and Rackin 2010). However, the gap between intended and completed fertility may, in part, result from weak or ambivalent intentions being included in the measure of intended parity. If a woman's fertility falls short of her intentions when these were weak, this may be assumed to be a less negative outcome for her happiness or well-being than if she held strong intentions to have another birth but failed to do so, and incorporating the strength of fertility intentions into the Bongaarts' framework would be a valuable extension.

Some fertility surveys, such as the Eurobarometer surveys (starting in 1979) and the Fertility and Family Surveys (1990s), focused on the collection of data relating to expected family size instead of short-term fertility intentions, but more recent surveys in the 2000s, including the ESS, the GGS, and the UK General Lifestyle Survey (formerly the General Household Survey) have captured short-term childbearing intentions and have distinguished between those women with 'definite' and 'probable' intentions and those with no intention of having a birth (European Commission 1990; ESS Round 2 2004; Office for National Statistics 2011; Netherlands Interdisciplinary Demographic Institute (NIDI) and United Nations Economic Commission for Europe (UNECE) n.d.; United Nations Economic Commission for Europe n.d.). Our findings certainly underscore the value of making these distinctions in both data collection and analysis.

Two limitations of our country-level analysis should be kept in mind. First, the gap between fertility intentions and births identified with our data can be referred to as 'unmet demand', but there might be additional unmet demand that we were not able to measure. Specifically, some women who would have liked to have a birth but believed that this was not feasible may have said that they did not intend to have a birth in the next 3 years. Second, a correspondence between fertility intentions and births at the country level does not necessarily indicate a correspondence at the individual level (Monnier 1987; Quesnel-Vallée and Morgan 2003); it may indicate that similar proportions of women were 'overachieving' and 'underachieving' the number of births they intended to have. We cannot differentiate between these two scenarios with our ESS data but, using data from three countries available from the longitudinal GGS, we were able to confirm that the majority of births occurring in the survey period were borne by women who had

stated 3 years previously that they intended to have them. Our macro approach has benefited from being able to undertake a broad set of international comparisons using identical survey instruments. This exercise has provided evidence that trends documented for particular countries at the individual level can be generalized to a broader set of locales. For example, the greater achievement of intended fertility among women who were already mothers, compared to women who were yet to bear a child, which had been found in the USA (Schoen et al. 1999; Barber 2001) and in Hungary (Spéder and Kapitány 2009) was observed in our broader sample of European countries.

Looking forward, we suggest that macro-level, comparative analyses of short-term childbearing plans and births, such as those reported here, can be useful tools when monitoring trends over time. Depending on whether low fertility in a population is the result of a low demand for births or the consequence of a failure to achieve childbearing intentions, quite different policy approaches may be called for. In the past, demand for children has typically been measured using 'expected family size', but we believe that the use of 'short-term fertility intentions' as a measure of the demand offers a number of advantages. In particular, the analysis of childbearing plans and behaviour in the short term allows one to distinguish between intentions and births by parity, to incorporate the degree of certainty attached to childbearing plans, and to synchronize more carefully between observations of conditions in a society and the measures of that society's fertility.

Generally, we suggest that fertility levels can be assessed not only in relation to 'replacement level', but also from the perspective of individual well-being. If these perspectives are combined, a country which appears to have favourable fertility outcomes because fertility is near replacement level can still have a large unmet demand for births, as is the case in France, while a country such as Slovakia, which appears to have unfavourably low levels of fertility, may have a relatively close correspondence between fertility intentions and births at the country level. Governments may wish to consider whether their sole objective is to have their country's population achieve replacement-level fertility, or whether helping women to realize their childbearing goals, whatever they may be, is a separate goal in itself. Even if policymakers are solely, or primarily, focused on national fertility targets, an awareness of women's intentions and the gap between those intentions and the actual number of children being born provides a starting point from which policies aiming to alter childbearing behaviour may be formulated. We would argue that analysis of the correspondence between short-term childbearing plans and births at a macro level can both inform policy decisions and provide rapid feedback on the impacts of policies on fertility.

Note

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Appendix A

Table A1 The proportion of women with childbearing plans by maternity status and country, for 22 European countries, Wave 2 (2004) of the European Social Survey

	Childless women, proportion planning a birth[1]				Mothers, proportion planning a birth[1]					
	Definitely yes	Probably yes	Probably not	Definitely not	Definitely yes	Probably yes	Probably not	Definitely not	No. of women giving valid answers to the questions on their childbearing plans	% of women for whom data on their childbearing plans were missing
Austria	0.09	0.15	0.29	0.47	0.06	0.09	0.17	0.69	587	7.7
Belgium	0.12	0.18	0.22	0.48	0.11	0.06	0.13	0.70	424	3.6
Czech Republic	0.13	0.22	0.21	0.45	0.04	0.10	0.19	0.66	567	13.0
Denmark	0.17	0.19	0.15	0.48	0.09	0.09	0.14	0.69	360	1.9
Estonia	0.13	0.19	0.22	0.45	0.06	0.14	0.21	0.58	451	8.7
Finland	0.10	0.23	0.33	0.34	0.10	0.15	0.25	0.50	465	1.9
France	0.23	0.28	0.20	0.29	0.15	0.10	0.16	0.59	411	4.0
Germany	0.08	0.15	0.26	0.51	0.04	0.06	0.20	0.70	644	5.6
Great Britain	0.11	0.22	0.24	0.44	0.08	0.06	0.15	0.71	475	3.1
Greece	0.16	0.19	0.17	0.47	0.07	0.14	0.18	0.61	532	8.1
Hungary	0.18	0.18	0.08	0.57	0.08	0.06	0.05	0.80	356	3.3
Netherlands	0.11	0.17	0.22	0.50	0.08	0.12	0.14	0.66	421	4.3
Norway	0.12	0.21	0.29	0.38	0.12	0.12	0.16	0.59	411	1.7
Poland	0.16	0.17	0.19	0.48	0.07	0.08	0.21	0.64	445	6.7
Portugal	0.11	0.18	0.20	0.51	0.06	0.11	0.23	0.61	495	4.8
Slovakia	0.07	0.14	0.18	0.61	0.08	0.07	0.16	0.70	381	6.2
Slovenia	0.07	0.20	0.30	0.42	0.04	0.09	0.23	0.64	357	1.9
Spain	0.09	0.19	0.25	0.46	0.09	0.13	0.27	0.51	387	10.6
Sweden	0.14	0.18	0.30	0.38	0.10	0.13	0.14	0.63	423	2.8
Switzerland	0.13	0.24	0.22	0.40	0.12	0.09	0.12	0.68	517	5.3
Turkey	0.10	0.10	0.16	0.65	0.08	0.09	0.18	0.64	626	9.4
Ukraine	0.22	0.17	0.22	0.39	0.04	0.07	0.25	0.64	425	12.6

[1]Respondents were asked: 'Do you plan to have a child within the next 3 years?'
Source: European Social Survey (ESS Round 2 and ESS Round 4).