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Fertility Differences by Education in Britain and France: The Role of Religion

Among the many determinants of fertility studied in developed countries, educational attainment and religious affiliation are important and opposing factors. While fertility levels rise with religious affiliation, they fall with women's education levels. The combined effect of these two characteristics is uncertain. Does religious affiliation attenuate the effect of educational attainment? Does education mitigate the effect of religion? Do these relationships vary across cultural contexts? To answer these questions, this article examines the entry into parenthood and completed fertility of cohorts of women born between the 1920s and 1960s in the United Kingdom and France according to their religious affiliation and practice and their level of education.

Education has long been recognized as a key factor in explaining fertility behaviour among women, as higher education is associated with lower fertility levels via several mechanisms. For example, extended time in education leads to the postponement of women's age at first birth (Ní Bhrolcháin and Beaujouan, 2012), which may result in higher rates of childlessness or lower completed fertility. Furthermore, education can introduce changes in traditional family values and preferences (McDonald, 2000; Esping-Andersen, 2009). Becker's (1991) economic theory of the family predicts that a rise in women's earning potential reduces the demand for children by increasing the opportunity costs of leaving the labour market to care for a child. Moreover, the quality–quantity trade-off model proposed by Becker and Lewis (1973) anticipates that parents with higher income invest more in their children's quality of life, which raises the cost of each additional child and leads to lower fertility. However, some authors suggest that the relationship between education and fertility may vary according to cultural contexts, such as religious affiliation and the extent of religious involvement, which affect the perceived costs and benefits attributed to childbearing and rearing (Heaton, 1998; Lehrer, 2004; Goldscheider, 2006; Newman and Hugo, 2006).

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Recent studies have documented the continuing relevance of religion to childbearing behaviour in Western countries. Across Europe and the United States, religiously affiliated individuals have more children compared to those who report having no religion (Philipov and Berghammer, 2007; Frejka and Westoff, 2008). Moreover, those who are more devout in each denomination (measured by religious service attendance and self-assessed religiosity) register higher fertility than their less religious peers (Philipov and Berghammer, 2007; Frejka and Westoff, 2008; Zhang, 2008; Berghammer, 2012; Peri-Rotem, 2016). These patterns are attributed to the most prominent religious traditions attaching greater importance to family life and childbearing (Norris and Inglehart, 2004; Chatters and Taylor, 2005; Adsera, 2006). Nevertheless, the relevance of religion to fertility behaviour is not limited to specific religious doctrines on methods of family planning or family-size norms. According to Goldscheider (1971, 2006), the mechanism by which religion shapes fertility behaviour is better understood within the wider context of social organization, such as the social norms and gender-role perceptions associated with different religious communities. Furthermore, women's investment in education and their level of participation in the labour force are also linked with religious affiliation and practice (Lehrer, 2004), which may affect fertility outcomes.

The interaction between education and religion and its implications for fertility outcomes are of particular interest due to education's association with the rejection of religious authority and traditions (Lesthaeghe and Surkyn, 1988; Surkyn and Lesthaeghe, 2004). Nonetheless, little is known about the interrelationships of education, religion, and fertility outcomes in Europe, where the religious landscape has been changing rapidly over recent decades. Focusing on completed fertility and childlessness, this study adds to the literature by analysing fertility differences by education and the way this relationship varies by religious affiliation and religiosity among women born between the late 1920s and late 1960s in Britain and France (for simplicity, this paper refers to those born in these countries as British and French, even though some may not be citizens). These countries provide useful case studies for this research because they share some sociodemographic characteristics and are geographically close. However, they differ in their religious composition and cultural heritage: the dominant religion in France is Roman Catholicism, whereas Britain is largely Protestant, with the Church of England as the established religious institution. Thus, most British Christians identify as Protestant, and only a minority (about 10% of the population) identify as Roman Catholic (Lee, 2012). Among non-Christian populations in Britain and France, Muslims comprise the largest faith community. Although the overall share of non-Christian populations is increasing, it represents less than a tenth of the populations in Britain and France (Pew Research Center, 2015).(1)

(1) Based on population estimates from 2010. These groups are not included in this study due to their small sample sizes in the analysed birth cohorts (see Appendix Table A.1 for a detailed description of the excluded religious groups).

During the latter half of the 20th century, both Britain and France experienced a marked decline in the proportion of religiously affiliated persons and religious service attendance (Lee, 2012; Baudin, 2015). In both Britain and France, the decline in religiosity is largely generational: over one-fifth of those born in the 1930s attended religious services on a monthly basis, whereas this proportion drops to around 10% among those born in the 1960s (Peri-Rotem, 2016). Nonetheless, previous studies highlight the continuing importance of religion in shaping attitudes and behaviour among actively religious individuals (Régnier-Loilier and Prioux, 2008; Peri-Rotem, 2016).

British Roman Catholics attend church more often than their Protestant counterparts, with 45% of Roman Catholics going at least once a month compared to 18% of Anglicans (Lee, 2012). Less than a fifth of French Roman Catholics attend church on a monthly basis, which is lower than other European Catholic countries (Pew Research Center, 2013). The low rate of church attendance in France is likely due to the historical conflict between the Catholic Church and the secular state, which dates to the French Revolution and ultimately led to the 1905 constitutional separation of church and state (Hubert, 2015). In Britain, on the other hand, religious practice among the Catholic community is partly shaped by immigration flows from Ireland, Italy, and Poland, countries where religious participation remains relatively high (Greeley, 2003; Weller, 2007).

Although only a minority of people in Britain and in France regularly attend religious services, more than half of these populations identified as Christians in 2010 (Pew Research Center, 2015). Thus, both countries are comprised of people who state they have no religious affiliation; are affiliated with a particular denomination but do not regularly attend religious services ('nominally religious'); and are practising religious individuals.

The fertility patterns of both countries trend towards a decline across cohorts born from the 1930s to the 1960s. Average completed cohort fertility dropped from 2.3 to 1.9 children in Britain and from 2.5 to 2.0 children in France (Human Fertility Database, 2017). However, Britain and France differ in their distributions of fertility across different age groups. Rendall et al. (2005, 2009) found that the age distribution at first birth among women born in the 1950s and 1960s is much more homogeneous in France than in Britain, as the latter is more polarized by social strata. This pattern results from highly educated women postponing birth in Britain compared to their less educated peers. These differences are attributed to each country's distinct family-policy regimes. France is characterized by a universalistic family policy with a relatively generous child-care provision, whereas family benefits in Britain are means-tested. Consequently, British women with higher earnings prospects are more incentivized to delay motherhood until later ages, as the opportunity costs of children are higher (Rendall et al., 2009). Furthermore, each country differs in their childbearing norms. For example,

Merz and Liefbroer (2012, p. 594) used comparative data from the 2006 European Social Survey to show that around 30% of French respondents expressed disapproval of voluntary childlessness compared to less than 10% of British respondents.

I. Religion, education, and fertility outcomes

The relationship between religion and education is a subject of considerable debate. The standard theory of secularization proposes that extended mass education and advances in science promote a rational worldview and therefore undermine beliefs in God and the metaphysical (Berger, 1967; Bruce, 2002). Nevertheless, the empirical evidence on the relationship between religiosity and education is diverse. For example, Greeley (2003) found that unaffiliated individuals in Europe are more likely to be highly educated than religiously affiliated people. However, this negative correlation is restricted to those born between the 1920s and 1950s, whereas the relationship is reversed among more recent birth cohorts. Similarly, Hubert's (2015) study on 1930s to 1960s French and other European cohorts concludes that religiously affiliated people have benefitted more than the unaffiliated from educational expansion. Moreover, she found that, among the religiously affiliated, those who frequently attend religious services tend to be better educated than rare attendees. Thus, religious adherence is not necessarily incompatible with the pursuit of higher education; rather, it is the religious and cultural context that influences this relationship.

The interaction between religion and education may influence fertility outcomes. Previous studies have pointed to variations in education's effect on fertility by level of religiosity, such as Newman's and Hugo's (2006) study of Australia, which found that fertility is more likely to drop with education among unaffiliated women when compared to their religiously affiliated peers. These relationships could be explained by the high value that religious traditions ascribe to family and children while also emphasising that traditional family roles be fulfilled (McQuillan, 2004; Norris and Inglehart, 2004; Chatters and Taylor, 2005). Thus, while increased levels of education are linked with greater emphasis on personal endeavours that may compete with familial roles, this effect may be weaker among women who are more religious.

Alternatively, more religiously active women may perceive the opportunity costs of children as lower when compared to less religious women. For example, the costs and benefits of a large family may be influenced by the religious context, as some religious communities provide psychological and social rewards in the form of approval and higher status to those who conform to prescribed family norms (Lehrer, 2004). Newman and Hugo (2006) argued that Australian women raised in Christian religious families were often encouraged to have large families and, at the same time, pursue

an education and a career. Thus, they perceive less conflict in combining family and work than do women with no religion. Other studies show that, compared to non-religious women, religiously observant women are more likely to adopt strategies for reconciling their family and work responsibilities, such as taking jobs with flexible and reduced hours (Edgell, 2006; Glass and Nath, 2006). Similarly, a study on religious differences in the labour supply of British and French women born in 1955–1975 found that practising religious women were more likely than unaffiliated women to reduce their working hours during the most common childbearing ages (25–35). However, they found no differences in overall employment rates by religiosity (Peri-Rotem, 2015).

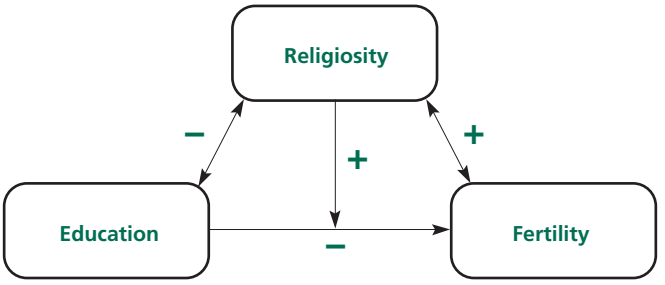
Other scholars highlight that religious belief and practice contribute to the development of coping strategies for dealing with new and stressful situations as well as the difficulties of daily life, such as those associated with work and family responsibilities (Pargament et al., 2000; Chatters and Taylor, 2005). In particular, members of religious social networks mutually exchange emotional and practical support (Putnam, 2000; Krause et al., 2001; Waite and Lehrer, 2003). For women with strong religious affiliations, this support may further reduce the direct and indirect costs of starting a family or having another child.

From this perspective, although higher education is generally associated with higher rates of childlessness, highly religious women are demonstrably more inclined to start a family even after having obtained higher qualifications. Therefore, our first hypothesis postulates that the negative educational gradient in entry into motherhood is more pronounced for unaffiliated women than for nominally or practising religious women.

Because affiliation with a religious community and attendance at religious services increase social capital, women who are more religious and seeking to expand their family may receive better support, be it emotional, material, or both. Among religious communities, the greater value and social incentives involved in having a large family may also influence the perceived costs of childbearing. More highly religious women would therefore be less likely to reduce their family size even if they have achieved higher education. Thus, our second hypothesis is that the completed fertility gradient by education is more strongly negative among unaffiliated women compared to their nominally and practising religious counterparts.

Figure 1 illustrates the expected interrelationships between education, religiosity, and fertility. Education leads to lower fertility, whereas religiosity increases fertility levels. However, we assume that education's effect on fertility depends on religiosity, i.e. the negative relationship between education and fertility is expected to be weaker for women who are more religious. In addition, the relationship between religiosity and education is assumed to be negative in general.

Figure 1. Expected interrelationships between education, religiosity, and fertility



Source: Author's construction.

II. Data and methods

1. Data sources

This study's data are based on the British Household Panel Survey (BHPS) (University of Essex, 2010) and the French Generations and Gender Survey (INED–INSEE, 2005). The French GGS is a panel survey, with the first wave carried out in 2005 and the second in 2008. However, due to a 35% non-random attrition rate between the first and second waves in the original sample (Régnier-Loilier et al., 2011), only the first-wave data are included in this study. The French survey's first wave covers a sample of around 10,000 individuals aged 18–80. It includes not only detailed information on partnership, birth histories, and socioeconomic variables, but also data on religious affiliation and the frequency of religious service attendance.

The BHPS is an annual survey of each member (aged 16 and older) of over 5,000 households in a nationally representative sample (totalling more than 10,000 individual interviews), covering 1991 through 2008 (18 waves).(2) The BHPS data were supplemented by consolidated files of union and birth histories for each respondent (Pronzato, 2011). The BHPS indicators of religiosity are similar to those of the GGS, although the question on religious affiliation was not asked every year. The analyses of British data are therefore based on the most recent survey from 2008, which contains more comprehensive information on religion. As this study's purpose is to explore religious differences in childlessness and completed fertility, the subsample in each country includes women aged 40–80 (born between 1928 and 1968 in Britain and between 1925 and 1965 in France) who have completed or nearly completed their childbearing period.

To maintain the data's representativeness, this study calculates all estimates using country-specific population weights. The French GGS weight variable adjusts for non-response at the individual level. For the BHPS data,

(2) Data from Northern Ireland are excluded because the religious characteristics of its population differ significantly from those in the other countries in the United Kingdom.

we use a cross-sectional weight for Wave 18 that includes new entrants, as this adjusts for unequal selection probabilities and the within-household non-response of individuals.

2. Measures

Religion

We use a country-specific measure of religious affiliation for Britain and France. Respondents in each country were asked to choose a particular religion to which they adhere from a list of the dominant religions in each country, namely specific Christian denominations and a 'no religion' category. Among the religiously affiliated (Roman Catholics in France and either Protestants or Roman Catholics in Britain), we distinguish between women who attend religious services at least monthly (i.e. practising) and those who attend less than once a month or not at all (i.e. nominally religious). Monthly attendance is a commonly used cut-off for practising and non-practising individuals (Voas, 2009; Burkimsher, 2014). Practising religious people represent a stronger adherence to religious tradition and values (Norris and Inglehart, 2004). Some religious groups are excluded from the study due to the insufficient sample size (see Appendix Table A.1). They represent about 10% of women aged 40–80 in Britain and about 6% of the same in France.

Education

For cross-country comparison, the measurement is based on UNESCO's (1997) International Standard Classification of Education (ISCED-97). ISCED's seven education categories (from 0 to 6) are grouped into three levels: 'lower secondary' (ISCED 0–2), which refers to having completed less than secondary school (*low*); 'upper secondary' (ISCED 3–4) (*medium*), which refers to having completed secondary school or any non-tertiary post-secondary education; and 'tertiary education', which refers to having earned a Bachelor's degree or higher (ISCED 5–6) (*high*).

Marital status

Marriage patterns are closely associated with religious affiliation and practice (Lehrer, 2004) as well as with fertility outcomes (Balbo et al., 2013). Therefore, the analyses of entry into motherhood and of completed fertility include a control for whether the respondent has ever been married.[3]

Country of birth

Since immigration status is highly correlated with religion as well as with other sociodemographic characteristics (Kaufmann et al., 2012), our models

(3) The never-married category includes women who have lived in non-marital cohabitation as well as unpartnered women. Because some religious groups have only few cases in either of these categories, they were merged.

include a binary variable indicating whether the respondent was born in the country of interview or abroad.

3. Analytical strategy

In the first stage, the sample characteristics of women aged 40–80 in each country are analysed to identify country-specific differences in the distribution of the key variables used in this study: religious group, education, marital status, nativity, average number of children ever born, and the proportion of women with children in each category. This provides the educational distribution by religious group, which allows us to examine the relationship between religion and education in Britain and France.

Childbearing probabilities for women aged 40–80 are estimated using a logistic regression model, where the dependent variable is given the value 1 if a woman has ever had children and 0 otherwise. This model controls for religion, education, birth cohort, whether the woman has ever married, and whether she is foreign-born. In addition, this model tests the interaction between education and religion. For comparisons, our interactive model calculates the average predicted probabilities of entering motherhood for each religious group at different levels of education. We estimated the average number of children ever born to women in this sample (including childless women) using a Poisson regression model, which is specifically designed for count outcome variables (Long and Freese, 2006). This model's covariates are similar to those of the logistic model and include the interaction between education and religion. The model therefore forms the basis for predicting the means of the number of children born, thus allowing us to compare the educational gradients in completed fertility across religious groups.

4. Data limitations

This study has several limitations due to missing information and the surveys' structures. For instance, religious affiliation and frequency of religious service attendance are measured at the time of interview, after childbearing has already taken place, thus posing a risk of reverse causality between childbirth and religiosity. Previous studies from the United States have found that having children could lead to increased religious participation, at least in the years following childbirth (Stolzenberg et al., 1995; Argue et al., 1999; Ingersoll-Dayton et al., 2002). However, longitudinal studies conducted in Europe found little or no evidence for this effect (see, for example: Tilley, 2003 (Britain); Berghammer, 2012 (Netherlands)). According to Berghammer (2012), family formation may imply religious involvement in the US differently than in Europe, as religion plays a pivotal role in social life in the US, whose church communities lend strong welfare support, particularly when compared to the more secular European countries. Apart from this possible reverse causality, determining a causal relationship between educational attainment and each variable is also difficult.

Therefore, rather than assessing causality, this study seeks primarily to understand the nexus of relationships between religion, education, and fertility.

Another limitation concerns the wording of the religion question in the British and French surveys. The BHPS asked respondents 'Do you regard yourself as belonging to any particular religion? If Yes: Which?', whereas the French GGS question is phrased more affirmatively: 'What is your religious affiliation (or your religion by birth)?' Moreover, asking respondents to state their religious affiliation is considered a sensitive issue in France, resulting in a relatively high proportion of missing data (7.6% of respondents refused to answer this question) (Régnier-Loilier and Prioux, 2008). While this could lead to a bias, the proportion of French people who identified as Roman Catholic in the GGS data is similar to figures in other studies using different data sources.(4) Yet, the 'no religion' category in France may represent mainly those who were not baptized. Furthermore, some respondents may be classified as Catholic despite considering themselves to be in no way religious. Therefore, one should be cautious when interpreting the comparison of unaffiliated individuals in Britain (33%) and France (6%). However, to improve the comparability of religious indicators in these countries, we use a combined measure of religious affiliation and practice. Thus, in both countries, the 'no religion' group represents the least religious individuals, followed by nominally religious people, while the practising religious constitute those at the opposite end of the religiosity scale.

III. Findings

Table 1 presents the sample characteristics of women aged 40–80 at the time of the British and French surveys: educational attainment, religious denomination and degree of involvement, proportion never-married, and proportion of foreign-born. Each category includes the number of children ever born and the proportion of women who have ever had children.

Women in Britain show generally higher levels of education than those in France, although these differences have diminished among women of more recent cohorts (not shown). In both countries, education is negatively correlated with the total number of children. Similarly, the likelihood of entering motherhood decreases with education in both countries, but the gap by level of education is slightly greater in Britain.

The proportion of religiously unaffiliated women is higher in Britain than in France (perhaps partly due to the different wording of the survey question), while the overall proportion of practising religious women is similar in both countries. As expected, women reporting no religious affiliation have the lowest

(4) In the French GGS, 80% of all adult respondents who answered the religious affiliation question identified as Catholics, compared to 82% in a study by Baudin (2015), which used data from French lifestyle survey (Enquête Mode de Vie des Français) (2007), and to 76% in a study by the Pew Research Center (2013).

Table 1. Sample characteristics of women aged 40–80 (using country-specific population weights)

A. Britain

	% (*n*)	Number of children per woman	% ever had children
Birth cohort			
1928–1935	13 (402)	2.2	81
1936–1945	21 (657)	2.1	87
1946–1955	27 (833)	2.0	86
1956–1968	39 (1,185)	1.9	84
Education			
Lower secondary	30 (926)	2.4	90
Upper secondary	39 (1,190)	1.9	85
Tertiary	31 (960)	1.8	80
Religious denomination			
No religion	33 (1,023)	1.8	81
Nominal Protestant	43 (1,330)	2.0	86
Practising Protestant	12 (360)	2.1	87
Nominal Catholic	7 (210)	2.1	86
Practising Catholic	5 (155)	2.5	92
Never married	9 (276)	0.7	40
Foreign-born	4 (123)	2.0	83
Total	100 (3,077)	2.0	85

Source: BHPS (2008).

B. France

	% (*n*)	Number of children per woman	% ever had children
Birth cohort			
1925–1935	17 (524)	2.5	85
1936–1945	21 (655)	2.2	90
1946–1955	30 (906)	2.0	89
1956–1965	32 (966)	2.0	88
Education			
Lower secondary	47 (1,423)	2.4	91
Upper secondary	34 (1,035)	2.0	88
Tertiary	19 (593)	1.9	84
Religious denomination			
No religion	6 (190)	1.9	82
Nominal Catholic	77 (2,347)	2.1	89
Practising Catholic	17 (514)	2.4	87
Never married	16 (474)	1.3	60
Foreign-born	9 (280)	2.4	93
Total	100 (3,051)	2.1	88

Source: GGS (2005).

completed fertility (1.8 children on average in Britain and 1.9 in France), whereas practising Catholic women have the highest completed fertility at 2.5 and 2.4 children on average in, respectively, Britain and France. Nominally

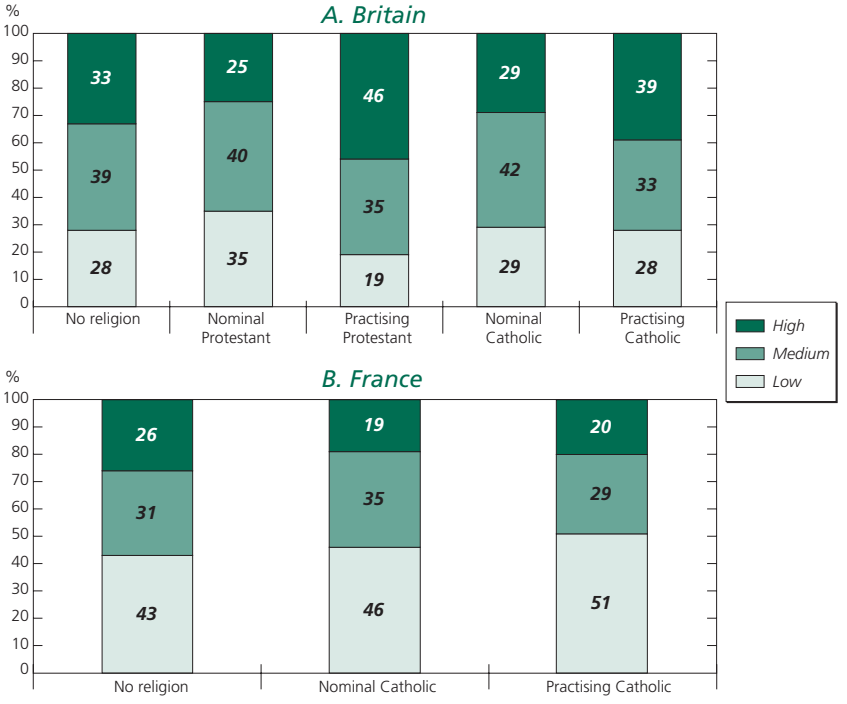
affiliated women in both countries also have higher fertility compared to unaffiliated women. Consistent with the findings on completed fertility, unaffiliated women are most likely to remain childless. Just over 80% of unaffiliated women in Britain and France have ever had children, while the proportion of mothers among religiously affiliated women is close to 90%.

The proportion of never-married women is higher in France than in Britain (16% vs. 9%). Moreover, the proportion of never-married women with children is considerably higher in France (61% vs. 41%). This can be attributed to the higher prevalence of non-marital cohabitation and childbearing outside marriage in France, compared to the more conservative family-formation patterns in Britain (Perelli-Harris et al., 2009).

Finally, the French sample is characterized by a higher proportion of foreign-born individuals (9% vs. 4% in Britain). The fertility levels of foreign-born women in France are also higher than the average family size in this country (2.4 children vs. 2.1); those of foreign-born women in Britain are similar to the average (2.0). This can be attributed to differences in immigration trends and to the composition of migrant populations in each country (see Kaufmann et al., 2012).

Figure 2 reveals the distribution of educational attainment by religious group in Britain and France. The findings show no consistent pattern in the

Figure 2. Educational attainment by religious group (in %)



Sources: BHPS (2008) for Britain; GGS (2005) for France.

relationship between religion and education. The greatest proportion of highly educated women in Britain is found among practising religious women (46% and 39% among practising Protestant and practising Catholic women, respectively). In France, on the other hand, the greatest proportion of highly educated women is found among those with no religious affiliation (26% vs. 19% and 20% among, respectively, nominally and practising Catholic women).

1. The odds of having children by education and religious group

Table 2 presents the results of the logistic regression model for the odds of becoming a mother. Model 1 estimates the odds of entering motherhood as a function of combined religious affiliation and practice, woman's education, birth cohort, and nativity. In Model 2, an interaction between religion and

Table 2. Logistic regression for motherhood among women aged 40–80 at the time of the surveys (odds ratios)

A. Britain

	Model 1	Model 2	Model 3	Model 4
Birth cohort				
1928–1935	0.516***	0.524***	0.357***	0.359***
1936–1945	0.861	0.862	0.642**	0.635**
1946–1955	0.972	0.952	0.714*	0.690**
1956–1968	*Ref.*	*Ref.*	*Ref.*	*Ref.*
Foreign-born	0.899	0.933	0.927	0.968
Never married			0.077***	0.075***
Religious denomination				
No religion	*Ref.*	*Ref.*	*Ref.*	*Ref.*
Nominal Protestant	1.553***	0.900	1.383**	0.665
Practising Protestant	2.039***	1.841	1.754**	1.461
Nominal Catholic	1.504	0.847	1.352	0.686
Practising Catholic	3.273***	0.754	2.350**	0.499
Education				
Lower secondary	*Ref.*	*Ref.*	*Ref.*	*Ref.*
Upper secondary	0.571***	0.350***	0.595***	0.314***
Tertiary	0.393***	0.254***	0.415***	0.227***
Religious denomination × Education				
Nominal Protestant × Upper secondary		2.152**		2.655**
Nominal Protestant × Tertiary		1.830		2.485**
Practising Protestant × Upper secondary		1.093		1.402
Practising Protestant × Tertiary		1.188		1.213
Nominal Catholic × Upper secondary		1.869		2.080
Nominal Catholic × Tertiary		2.263		2.709
Practising Catholic × Upper secondary		12.236***		12.365**
Practising Catholic × Tertiary		6.245**		7.539***
N	3,077	3,077	3,077	3,077
Log pseudo-likelihood	–1734.7	–1724.7	–1515.6	–1503.7

* $p < .10$, ** $p < .05$, *** $p < .01$.
Source: BHPS (2008).

Table 2 (cont'd). Logistic regression for motherhood among women aged 40–80 at the time of the surveys (odds ratios)

B. France

	Model 1	Model 2	Model 3	Model 4
Birth cohort				
1928–1935	0.517***	0.524***	0.376***	0.376***
1936–1945	0.904	0.909	0.549***	0.547***
1946–1955	0.966	0.972	0.623***	0.624***
1956–1965	*Ref.*	*Ref.*	*Ref.*	*Ref.*
Foreign-born	1.745**	1.754**	1.569*	1.567
Never married			0.097***	0.097***
Religious denomination				
No religion	*Ref.*	*Ref.*	*Ref.*	*Ref.*
Nominal Catholic	1.803***	1.784	1.627**	1.965*
Practising Catholic	1.642**	1.576	1.591*	2.013
Education				
Lower secondary	*Ref.*	*Ref.*	*Ref.*	*Ref.*
Upper secondary	0.654***	0.722	0.762*	1.052
Tertiary	0.445***	0.392*	0.553***	0.719
Religious denomination × Education				
Nominal Catholic × Upper secondary		0.922		0.734
Nominal Catholic × Tertiary		1.093		0.738
Practising Catholic × Upper secondary		0.804		0.590
Practising Catholic × Tertiary		1.487		0.816
N	3,051	3,051	3,051	3,051
Log pseudo-likelihood	–954.5	–953.9	–812.8	–812.3

* $p < .10$, ** $p < .05$, *** $p < .01$.
Source: GGS (2005).

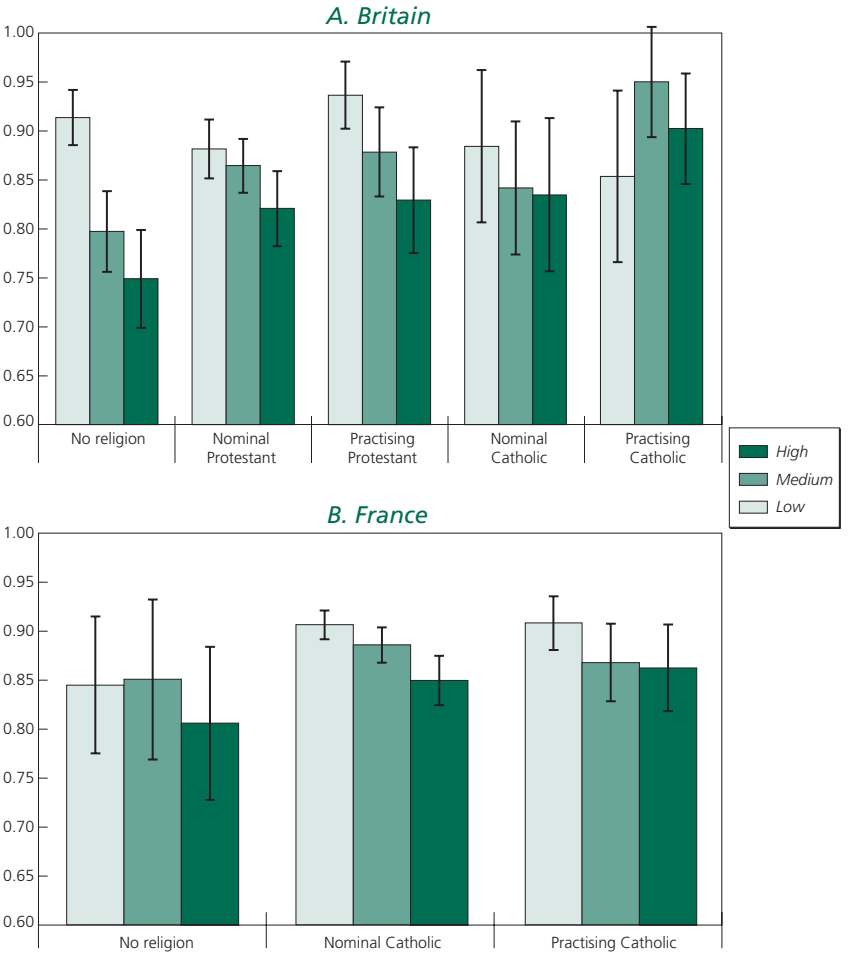
education is introduced. As the interrelationships between education, religion, and fertility may be partly mediated by marital status, the control variable for never-married women is added to Models 3 and 4. The findings show that in both countries, women with upper secondary or tertiary education are less likely to become mothers compared to women with a lower level of education. However, this relationship is more robust in Britain than in France. In terms of religion, unaffiliated women are less likely to become mothers compared to nominally and practising religious women in both countries (although this odds ratio is not significantly different for nominally Catholic—relative to unaffiliated—women in Britain).

Never-married women are significantly less likely to become mothers compared to ever-married women in both countries (Table 2, Models 3 and 4). Furthermore, when adding the covariate for never-married women, the magnitude of the coefficients for the religious groups in Britain and France becomes slightly less large, which may indicate that some of the relationship between religion and the transition to parenthood is explained by differential marriage patterns among affiliated and unaffiliated women.

An interaction effect between religion and education on the odds of having children is found only in Britain. Compared to unaffiliated women with lower secondary education, there is a significant positive interaction for nominally Protestant women with upper secondary and tertiary education and for practising Catholic women in the same educational groups (Table 2A, Model 4). No significant interaction is found for practising Protestant and nominally Catholic women in Britain. However, when Protestant and Catholic denominations are merged, the interaction between religion and education is significant for all nominal and practising women (see Appendix Table A.2).

To better understand how religion and education interact with entry into motherhood, Figure 3 illustrates the predicted probabilities for motherhood

Figure 3. Average predicted probabilities for motherhood by religious group and level of education (women aged 40–80 at the time of the surveys)



Sources: BHPS (2008) for Britain; GGS (2005) for France.

by religious group and education in Britain and France. Among unaffiliated women in Britain, those with upper secondary (medium) and tertiary (high) education are significantly less likely to have children compared to less-educated women within that group. By contrast, the differences in the predicted probabilities of motherhood by educational attainment are less significant among nominally and practising religious women. In France, on the other hand, no significant differences by education are found among unaffiliated women. Therefore, our first hypothesis is not supported in France, but it does hold in Britain: a stronger negative relationship exists between education and childlessness among religiously unaffiliated women compared to other religious groups.

2. Completed fertility gradient by educational attainment among religious groups

In this section, a Poisson regression model is used to predict the number of children ever born to women aged 40–80 at the time of the surveys in each country. The results of the model are presented in Table 3. The findings from Britain show that both nominally and practising religious women have a significantly higher number of children compared to unaffiliated women (Table 3A, Models 1 and 3). In France, on the other hand, only practising Catholic women show significantly higher completed fertility compared to unaffiliated women (Table 3B, Models 1 and 3). In accordance with the descriptive findings, education is negatively associated with the number of children in both countries, while never-married women have significantly lower completed fertility than ever-married women, although this relationship is somewhat more pronounced in Britain than in France.

When including the interaction term for education and religion, a significant positive interaction is found in Britain for nominally Protestant women with upper secondary and tertiary education, as well as for practising Protestant women with tertiary education when compared to the reference category of unaffiliated less-educated women (Table 3A, Models 2 and 4). When modelling all nominally and practising religious women in Britain together, we find a significant interaction for nominally religious women with upper secondary (medium) and tertiary (high) levels of education and for practising women with higher education (see Appendix Table A.3).

In France, a significant positive interaction is found for both nominally and practising Catholic women with upper secondary and tertiary education in relation to the reference group (Table 3B, Models 2 and 4). Therefore, consistent with our second hypothesis, the findings from Britain and France point to a significant variation in the relationship between education and completed fertility across religious groups. Moreover, the interaction between religion and education in Britain and France remains significant when foreign-born women are excluded from the analysis (not shown).

Table 3. Poisson regression for number of children ever born to women aged 40–80 at the time of the surveys (incidence rate ratios)

A. Britain

	Model 1	Model 2	Model 3	Model 4
Birth cohort				
1928–1935	1.041	1.049	1.000	1.006
1936–1945	1.011	1.014	0.974	0.976
1946–1955	1.002	0.997	0.961	0.957
1956–1968	*Ref.*	*Ref.*	*Ref.*	*Ref.*
Foreign-born	0.972	0.982	0.979	0.990
Never married			0.346***	0.347***
Religious denomination				
No religion	*Ref.*	*Ref.*	*Ref.*	*Ref.*
Nominal Protestant	1.106***	0.993	1.068**	0.957
Practising Protestant	1.159***	0.989	1.107**	0.954
Nominal Catholic	1.173**	1.123	1.140**	1.100
Practising Catholic	1.376***	1.245	1.279***	1.182
Education				
Lower secondary	*Ref.*	*Ref.*	*Ref.*	*Ref.*
Upper secondary	0.796***	0.740***	0.810***	0.753***
Tertiary	0.774***	0.658***	0.798***	0.680***
Religious denomination × Education				
Nominal Protestant × Upper secondary		1.160*		1.159**
Nominal Protestant × Tertiary		1.209**		1.222**
Practising Protestant × Upper secondary		1.076		1.090
Practising Protestant × Tertiary		1.414***		1.371**
Nominal Catholic × Upper secondary		0.955		0.945
Nominal Catholic × Tertiary		1.240		1.222
Practising Catholic × Upper secondary		1.054		1.017
Practising Catholic × Tertiary		1.280		1.243
Constant	2.124***	2.286***	2.338***	2.511***
N	3,077	3,077	3,077	3,077
Log pseudo-likelihood	–6,889.6	–6,876.1	–6,690.8	–6,678.9

* $p < .10$, ** $p < .05$, *** $p < .01$.
Source: BHPS (2008).

Figure 4 illustrates the adjusted predicted means of children ever born by religious group and level of education. In Britain (Figure 4A), the group of unaffiliated women show a linear decline in completed fertility by education: from 2.3 children among the least educated women to 1.8 and 1.6 among, respectively, upper secondary and tertiary educated women. A negative fertility gradient is also found for nominally Protestant women, although the decline is less steep: from 2.2 children on average among lower secondary educated to 1.9 and 1.8 children among women with upper secondary and tertiary education. By contrast, a U-shaped fertility curve exists for practising Protestants and nominally and practising Catholics, as the least educated have the highest completed fertility, followed by a decline among those with upper secondary education and then a

Table 3 (cont'd). Poisson regression for number of children ever born to women aged 40–80 at the time of the surveys (incidence rate ratios)

B. France

	Model 1	Model 2	Model 3	Model 4
Birth cohort				
1928–1935	1.127***	1.141***	1.097**	1.110**
1936–1945	1.059	1.069*	1.001	1.010
1946–1955	0.975	0.980	0.927**	0.932**
1956–1965	*Ref.*	*Ref.*	*Ref.*	*Ref.*
Foreign-born	1.118**	1.132**	1.100*	1.112**
Never married			0.557***	0.562***
Religious denomination				
No religion	*Ref.*	*Ref.*	*Ref.*	*Ref.*
Nominal Catholic	1.086	0.919	1.058	0.919
Practising Catholic	1.182**	0.937	1.162**	0.954
Education				
Lower secondary	*Ref.*	*Ref.*	*Ref.*	*Ref.*
Upper secondary	0.853***	0.656***	0.875***	0.690***
Tertiary	0.842***	0.534***	0.879***	0.603***
Religious denomination × Education				
Nominal Catholic × Upper secondary		1.318**		1.283*
Nominal Catholic × Tertiary		1.524***		1.410***
Practising Catholic × Upper secondary		1.337*		1.297*
Practising Catholic × Tertiary		2.078***		1.852***
Constant	2.040***	2.398***	2.280***	2.608***
N	3,051	3,051	3,051	3,051
Log pseudo-likelihood	–4,623.9	–4,611.7	–4,529.7	–4,520.7

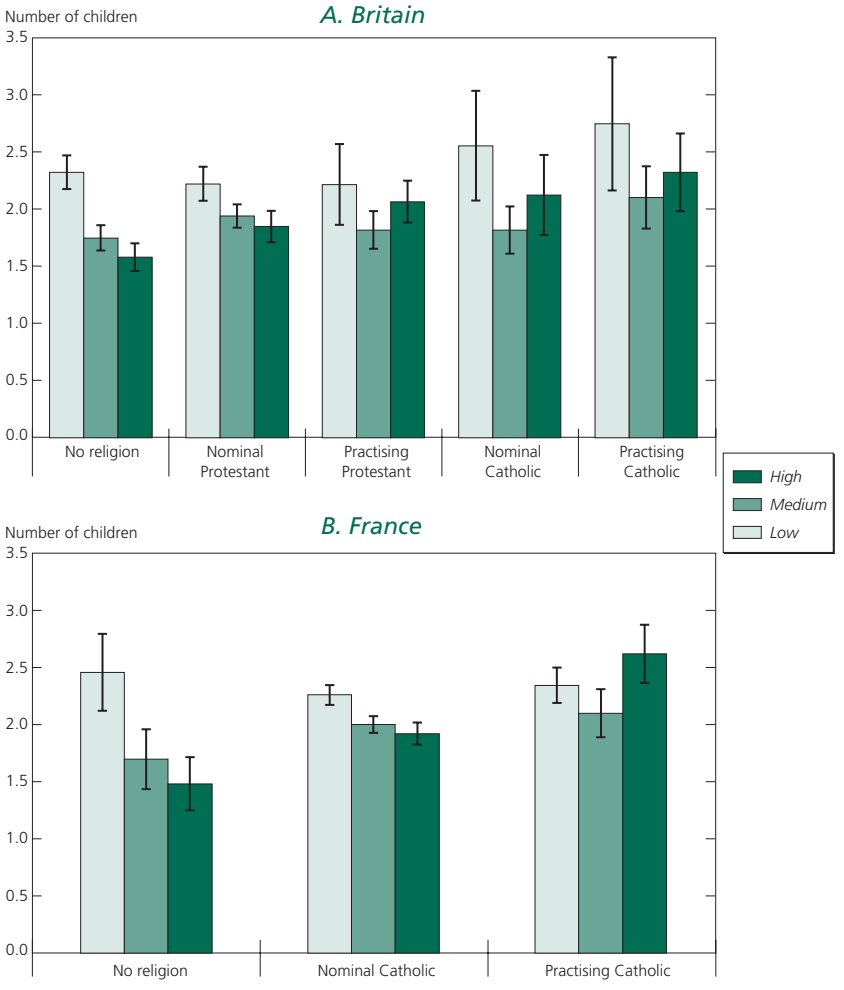
* $p < .10$, ** $p < .05$, *** $p < .01$.
Source: GGS (2005).

rise among those with tertiary education. Furthermore, nominally and practising religious women with tertiary education have significantly higher completed fertility than do unaffiliated women with the same level of education.

In France, there is also evidence of a U-shaped fertility gradient by education among practising Catholic women (Figure 4B), with highly educated women in this group showing the largest family size: 2.6 children on average compared to 2.3 children for the least educated, and 2.1 children for those with upper secondary (medium) education. On the other hand, fertility declines with education among nominally Catholic and unaffiliated women, although the educational gradient of completed fertility is much steeper for the unaffiliated: from 2.5 children at the lowest level of education to 1.7 at the upper secondary level, and 1.5 at tertiary education. The corresponding predicted means for nominally Catholic women are: 2.3 among the less educated, then it declines from 2.0 to 1.9 children among moderately and highly educated women. Thus, as in Britain, the differences in completed fertility by religion are particularly pronounced at a high level of education.

Overall, these findings support our second hypothesis, according to which the educational gradient of completed fertility is more strongly negative for unaffiliated women than for those who are more religious. The steeper decline in fertility with education among unaffiliated women may reflect disparities in the perceived cost and benefits of children for women in each religious group.

Figure 4. Predicted means of children ever born by religious group and level of education (women aged 40–80 at the time of the surveys)



Notes: Means adjusted for birth cohort, nativity, and ever-married. Bars represent 90% confidence intervals.
Sources: BHPS (2008) for Britain; GGS (2005) for France.

Conclusion

This study examines the interrelationships between religion, education, and fertility outcomes in Britain and France, focusing on women who have completed (or nearly completed) their reproductive years. First, we explored the distribution of educational attainment by religion, using a combined measure of religious affiliation and practice. Then, different types of regression analyses were employed to estimate the odds of having children and the number of children ever born as a function of education and the combined measure for religion. The descriptive findings show no consistent relationship between religion and educational attainment in Britain and France for women born from the 1920s to the 1960s. However, we do show that, at the individual level, greater religious involvement can go hand in hand with having obtained higher education, as the proportion of highly educated women among the practising religious group is either similar (in France) or higher (in Britain) than the average proportion. Furthermore, by analysing the interaction between education and religion in relation to childbearing patterns, educational attainment is found to result in differential fertility outcomes among women with varying levels of religious adherence.

The first hypothesis, which predicted a stronger association between education and childlessness among unaffiliated women compared to nominally and practising religious women, is supported by the findings in Britain but not in France. This may be due to the latter having smaller differences in childlessness rates by educational attainment. For example, bearing in mind both the relatively generous child-care provision in France (Rendall et al., 2009) and the greater disapproval of voluntary childlessness (Merz and Liefbroer, 2012), one may reasonably conclude that these contribute to the smaller variation in the proportion of women entering parenthood by level of education. In addition, women identified as religiously unaffiliated in France may differ from those in Britain due to differences in the survey questions on religious affiliation.

Nevertheless, when examining the interrelationships between education, religion, and completed fertility, we find a significant interaction between religion and education in both countries. Thus, consistent with the second hypothesis, nominally and practising religious women are less likely than unaffiliated women to reduce their family size when obtaining higher qualifications. The differences in the educational gradient in completed fertility are most pronounced for practising religious women, of whom the lowest and highest educated are found to have the largest family sizes. These patterns can be explained by variations in the perceived costs and value of children among different religious groups. As described above, religious involvement may affect the costs and benefits of a large family, through social rewards or psychological and practical support (Lehrer, 2004). In particular, women who regularly attend religious services are more likely to benefit from different types of assistance (Krause et al., 2001; Waite and Lehrer 2003; Chatters and Taylor, 2005). Because,

on the one hand, family life and children are highly valued by religious communities and, on the other, women who are more religious receive more support when seeking to expand their families, they perceive both the direct and indirect costs of children as lower than do other social groups. These combined high-fertility aspirations and improved social and financial resources could account for the U-shaped relationship between education and completed fertility among practising religious women. Thus, not only is there no contradiction between religious adherence and higher education, increased human capital may enable higher fertility among the more religious groups.

Despite the unique characteristics of the British and French societies, higher religiosity is linked with higher fertility in both; and it appears to attenuate the negative association between education and completed family size. These findings shed some light on the importance of religion in understanding variations in the relationship between education and fertility. As this study shows, the relationship between education and fertility outcomes is not uniform across religious groups, and in some cases higher education may lead to higher fertility, as we find among practising Catholic women in France. For this group, completed fertility is highest among the most educated women, which may be the result of placing a high value on children while improving the resources for having them and reducing their costs. Future studies should consider these complexities when analysing the effect of religion on demographic and socioeconomic patterns.

Appendix

Table A.1. Sample size and average number of children per woman for religious groups excluded from the study

A. Britain

	n (% of valid sample)	Number of children per woman
Christian (no denomination)	259 (7.4)	2.0
Muslim	19 (0.5)	3.4
Hindu	11 (0.3)	2.0
Jewish	15 (0.4)	1.7
Sikh	11 (0.3)	2.7
Other	48 (1.4)	1.8
Total	363 (10.3)	2.0

B. France

	n (% of valid sample)	Number of children per woman
Orthodox Christians	12 (0.4)	1.8
Protestant	68 (2.1)	1.9
Muslim	59 (1.8)	3.1
Jewish	19 (0.6)	2.3
Buddhist	8 (0.3)	1.8
Other	19 (0.6)	2.2
Total	185 (5.7%)	2.3

Coverage: Women aged 40–80 at the time of the surveys, unweighted data.
Sources: BHPS (2008) for Britain; GGS (2005) for France.

Table A.2. Logistic regression for motherhood among women aged 40–80 at the time of the survey in Britain (odds ratios)

	Model 1	Model 2	Model 3	Model 4
Birth cohort:				
1928–1935	0.515***	0.525***	0.356***	0.364***
1936–1945	0.855	0.853	0.640**	0.633**
1946–1955	0.972	0.956	0.715*	0.697**
1956–1968	*Ref.*	*Ref.*	*Ref.*	*Ref.*
Foreign-born	0.950	0.983	0.959	0.998
Never married			0.077***	0.074***
Religious denomination				
No religion	*Ref.*	*Ref.*	*Ref.*	*Ref.*
Nominal Christians[(a)]	1.548***	0.893	1.380**	0.665
Practising Christians	2.300***	1.203	1.887***	0.873
Education				
Lower secondary	*Ref.*	*Ref.*	*Ref.*	*Ref.*
Upper secondary	0.568***	0.350***	0.592***	0.314***
Tertiary	0.390***	0.253***	0.413***	0.227***
Religious denomination × Education				
Nominal Christians × Upper secondary		2.109**		2.572**
Nominal Christians × Tertiary		1.887*		2.526**
Practising Christians × Upper secondary		2.182		2.803*
Practising Christians × Tertiary		2.151		2.389*
N	3,077	3,077	3,077	3,077
Log pseudo-likelihood	–1,736.1	–1,731.0	–1,516.1	–1,508.6

(a) Compared to Table 3, these models combine Protestants and Catholics (called Christians).
* $p < .10$, ** $p < .05$, *** $p < .01$.
Source: BHPS (2008).

Table A.3. Poisson regression for number of children ever born to women aged 40–80 at the time of the survey in Britain (incidence rate ratios)

	Model 1	Model 2	Model 3	Model 4
Birth cohort:				
1928–1935	1.033	1.043	0.993	1.002
1936–1945	1.001	1.008	0.964	0.971
1946–1955	0.997	0.995	0.956	0.955
1956–1968	*Ref.*	*Ref.*	*Ref.*	*Ref.*
Foreign-born	1.018	1.035	1.023	1.039
Never married			0.345***	0.346***
Religious denomination				
No religion	*Ref.*	*Ref.*	*Ref.*	*Ref.*
Nominal Christians [(a)]	1.118***	1.009	1.080**	0.974
Practising Christians	1.227***	1.086	1.162***	1.041
Education				
Lower secondary	*Ref.*	*Ref.*	*Ref.*	*Ref.*
Upper secondary	0.793***	0.738***	0.807***	0.751***
Tertiary	0.768***	0.655***	0.793***	0.677***
Religious denomination × Education				
Nominal Christians × Upper secondary		1.133*		1.131*
Nominal Christians × Tertiary		1.221**		1.231**
Practising Christians × Upper secondary		1.046		1.045
Practising Christians × Tertiary		1.336**		1.299**
Constant	2.135***	2.290***	2.348***	2.515***
N	3,077	3,077	3,077	3,077
Log pseudo-likelihood	–6,895.1	–6,884.9	–6,695.1	–6,686.2

(a) Compared to Table 3, these models combine Protestants and Catholics (called Christians).
* $p < .10$, ** $p < .05$, *** $p < .01$.
Source: BHPS (2008).

References

Adsera A., 2006, Religion and changes in family-size norms in developed countries, *Review of Religious Research*, 47(3), 271–286.

Argue A., Johnson D. R., White L. K., 1999, Age and religiosity: Evidence from a three-wave panel analysis, *Journal for the Scientific Study of Religion*, 38(3), 423–435.

Balbo N., Billari F. C., Mills M., 2013, Fertility in advanced societies: A review of research, *European Journal of Population*, 29(1), 1–38.

Baudin T., 2015, Religion and fertility: The French connection, *Demographic Research*, 32(art. 13), 397–420.

Becker G. S., 1991, *A treatise on the family*, Cambridge, MA, Harvard University Press.

Becker G. S., Lewis G. H., 1973, On the interaction between the quantity and quality of children, *Journal of Political Economy*, 81(2), S279–S288.

Berger P. L., 1967, *The sacred canopy: Elements of a sociological theory of religion*, Garden City, NY, Doubleday.

Berghammer C., 2012, Church attendance and childbearing: Evidence from a Dutch panel study, 1987–2005, *Population Studies*, 66(2), 197-212.

Bruce S., 2002, *God is dead: Secularization in the West*, Oxford, Blackwell.

Burkimsher M., 2014, Is religious attendance bottoming out? An examination of current trends across Europe, *Journal for the Scientific Study of Religion*, 53(2), 432–445.

Chatters L. M., Taylor R. J., 2005, Religion and families, in Bengston V. L., Acock A. C., Allen K. R., Dilworth-Anderson P., Klein D. M. (eds.), *Sourcebook of family theory and research*, Thousand Oaks/ London/New Delhi, Sage Publications, 517–530.

Edgell P., 2006, *Religion and family in a changing society*, Princeton, NJ, Princeton University Press.

Esping-Andersen G., 2009, *The incomplete revolution: Adapting to women's new roles*, Cambridge, Polity Press.

Frejka T., Westoff C. F., 2008, Religion, religiousness and fertility in the US and in Europe, *European Journal of Population*, 24(1), 5–31.

Glass J., Nath L. E., 2006, Religious conservatism and women's market behavior following marriage and childbirth, *Journal of Marriage and Family*, 68(3), 611–629.

Goldscheider C., 1971, *Population, modernization, and social structure*, Boston, Little, Brown and Company.

Goldscheider C., 2006, Religion, family, and fertility: What do we know historically and comparatively? in Derosas R., van Poppel, (eds.), *Religion and the decline of fertility in the Western World*, Dordrecht, Springer, 41–57.

Greeley A. M., 2003, *Religion in Europe at the end of the second millennium: A sociological profile*, New Brunswick, NJ, Transaction Publishers.

Heaton T. B., 1998, Religious influences on Mormon fertility: Cross-national comparisons, in Duke J. T. (ed.), *Latter-day Saint social life: Social research on the LDS Church and its members*, Provo, UT, Religious Studies Center, Brigham Young University, 425–440.

Hubert S., 2015, *The impact of religiosity on fertility: A comparative analysis of France, Hungary, Norway, and Germany*, Wiesbaden, Springer VS.

Human Fertility Database, 2017, Max Planck Institute for Demographic Research (Germany) and Vienna Institute of Demography (Austria). Available at www.humanfertility.org (data downloaded on 12 June 2018).

Institut National D'études Démographiques (INED)/Institut National De La Statistique Et Des Études Économiques (INSEE), 2005, *Generations and Gender Survey France Wave 1,* Version 4.2.

Ingersoll-Dayton B., Krause N., Morgan D., 2002, Religious trajectories and transitions over the life course, *International Journal of Aging and Human Development*, 55(1), 51–70.

Kaufmann E., Goujon A., Skirbekk V., 2012, The end of secularization in Europe?: A socio-demographic perspective, *Sociology of Religion*, 73(1), 69–91.

Krause N., Ellison C. G., Shaw B. A., Marcum J. P., Boardman J. D., 2001, Church-based social support and religious coping, *Journal for the Scientific Study of Religion*, 40(4), 637–656.

Lee L., 2012, Losing faith? in Park A., Clery E., Curtice J., Philips M., Utting D. (eds.), *British Social Attitudes 28,* London, Sage, 173–184.

Lehrer E. L., 2004, Religion as a determinant of economic and demographic behavior in the United States, *Population and Development Review*, 30(4), 707–726.

Lesthaeghe R., Surkyn J., 1988, Cultural dynamics and economic theories of fertility change, *Population and Development Review*, 14(1), 1–45.

Long J. S., Freese J., 2006, Regression models for categorical dependent variables using Stata, College Station, TX, Stata Press.

Mcdonald P., 2000, Gender equity, social institutions and the future of fertility, *Journal of Population Research*, 17(1), 1–16.

Mcquillan K., 2004, When does religion influence fertility? *Population and Development Review*, 30(1), 25–56.

Merz É.-M., Liefbroer A. C., 2012, The attitude toward voluntary childlessness in Europe: Cultural and institutional explanations, *Journal of Marriage and Family*, 74(3), 587–600.

Newman L. A., Hugo G. J., 2006, Women's fertility, religion and education in a low-fertility population: Evidence from South Australia, *Journal of Population Research*, 23(1), 41–66.

Ní Bhrolcháin M., Beaujouan É., 2012, Fertility postponement is largely due to rising educational enrolment, *Population Studies*, 66(3), 311–327.

Norris P., Inglehart R., 2004, *Sacred and secular: Religion and politics worldwide*, Cambridge, Cambridge University Press, 392 p.

Pargament K. I., Koenig H. G., Perez L. M., 2000, The many methods of religious coping: Development and vital validation of the RCOPE, *Journal of Clinical Psychology*, 56(4), 519–543.

Perelli-Harris B., Kreyenfeld M., Sigle-Rushton W., Keizer R., Lappegård T., Jasilioniene A., Berghammer C., Di Giulio P., Koeppen K., 2009, *The increase in fertility in cohabitation across Europe: Examining the intersection between union status and childbearing* (MPIDR Working Paper WP 2009-021), Rostock, Max Planck Institute for Demographic Research.

Peri-Rotem N., 2015, *The role of religion in shaping women's family and employment patterns in Britain and France* (Unpublished doctoral dissertation), University of Oxford.

PERI-ROTEM N., 2016, Religion and fertility in Western Europe: Trends across cohorts in Britain, France and the Netherlands, *European Journal of Population*, 32(2), 231–265.

PEW RESEARCH CENTER, 2013, 5 March, During Benedict's Papacy, religious observance among Catholics in Europe remained low but stable, *Pew Research Center, Religion & Public Life*. Retrieved from http://www.pewforum.org/2013/03/05/during-benedicts-papacy-religious-observance-among-catholics-in-europe-remained-low-but-stable/

PEW RESEARCH CENTER, 2015, 2 April, Religious composition by country, 2010–2050, *Pew Research Center, Religion & Public Life*. Retrieved from http://www.pewforum.org/2015/04/02/religious-projection-table/2010/percent/all/#

PHILIPOV D., BERGHAMMER C., 2007, Religion and fertility ideals, intentions and behaviour: A comparative study of European countries, *Vienna Yearbook of Population Research*, 5, 271–305.

PRONZATO C., 2011, *British Household Panel Survey consolidated marital, cohabitation and fertility histories, 1991–2009* (Data collection), 3rd ed., University of Essex, Institute for Social and Economic Research. Retrieved from http://dx.doi.org/10.5255/UKDA-SN-5629-1

PUTNAM R., 2000, *Bowling alone: The collapse and revival of American community*, New York, Simon & Schuster.

RÉGNIER-LOILIER A., PRIOUX F., 2008, Does religious practice influence family behaviours? *Population & Societies*, 447, July–August.

RÉGNIER-LOILIER A., SABONI L., VALDES B., 2011, *Presentation and modifications to the Generations and Gender Survey questionnaire in France (Wave 2): L'Étude des relations familiales et intergénérationnelles (EFRI)* (Working Paper 173), Paris, INED.

RENDALL M., COUET C., LAPPEGÅRD T., ROBERT-BOBÉE I., RØNSEN M., SMALLWOOD S., 2005, First birth by age and education in Britain, France and Norway, *Population Trends*, 121, 27–34.

RENDALL M., EKERT-JAFFÉ O., JOSHI H., LYNCH K., MOUGIN R., 2009, Universal versus economically polarized change in age at first birth: A French–British comparison, *Population and Development Review*, 35(1), 89–115.

STOLZENBERG R. M., BLAIR-LOY M., WAITE L. J., 1995, Religious participation in early adulthood: Age and family life cycle effects on church membership, *American Sociological Review*, 60(1), 84–103.

SURKYN J., LESTHAEGHE R., 2004, Values orientations and the second demographic transition (SDT) in Northern, Western and Southern Europe: An update, *Demographic Research* [Special collection 3], 45–86.

TILLEY J. R., 2003, Secularization and aging in Britain: Does family formation cause greater religiosity? *Journal for the Scientific Study of Religion*, 42(2), 269–278.

UNESCO, 1997, *International Standard Classification of Education: ISCED 1997*, Paris, UNESCO Institute for Statistics. Retrieved from www.unece.org/fileadmin/DAM/env/esd/inf.meeting.docs/EGonInd/ISCED.97.manual.pdf

UNIVERSITY OF ESSEX, INSTITUTE FOR SOCIAL AND ECONOMIC RESEARCH (ISER), 2010, *British Household Panel Survey: Waves 1–18, 1991-2009* [Data collection], 7th ed. Retrieved from http://dx.doi.org/10.5255/UKDA-SN-5151-1.

VOAS D., 2009, The rise and fall of fuzzy fidelity in Europe, *European Sociological Review*, 25(2), 155–168.

WAITE L. J., LEHRER E. L., 2003, The benefits from marriage and religion in the United States: A comparative analysis, *Population and Development Review*, 29(2), 255–275.

WELLER P., 2007, *Religions in the UK 2007–2010*, Derby, Multi-Faith Centre, University of Derby.

ZHANG L., 2008, Religious affiliation, religiosity, and male and female fertility, *Demographic Research*, 18(art. 8), 233–262.

Nitzan Peri-Rotem • Fertility Differences by Education in Britain and France: The Role of Religion

Female education is generally associated with lower fertility and higher rates of childlessness. However, it remains unclear whether higher education implies similar fertility behaviour among women of different religious denominations at varying levels of religiosity. To assess whether this is the case, this study uses data from the British Household Panel Survey and the French Generations and Gender Survey to explore the intersection of religion (measured by religious practice, Catholic affiliation in France, and Protestantism and in Britain), education, and fertility outcomes for women born between the 1920s and 1960s. In Britain, higher education reduces the odds of entering motherhood more often among religiously unaffiliated women compared to nominally and practising religious women, although no such interaction effect is found in France. However, religiosity in both countries attenuates the negative relationship between education and completed family size. While unaffiliated women have a negative educational gradient of fertility, this study finds a U-shaped relationship between education and completed fertility among practising Catholic women. Moreover, differences in completed fertility by religious affiliation and practice are more pronounced among highly educated women. These findings are attributed to differences in the perceived value and costs of children across religious groups.

Nitzan Peri-Rotem • Écarts de fécondité en fonction du niveau d'instruction : le rôle de la religion en Grande-Bretagne et en France

La fécondité baisse et l'infécondité augmente généralement avec le niveau d'instruction des femmes. On ne sait pas vraiment si un niveau d'études supérieures implique un comportement reproductif identique chez les femmes selon les confessions et les pratiques religieuses. Cette étude utilise des données issues de l'Enquête par anel auprès des ménages britanniques (BHPS) et du volet français de l'enquête Generations and Gender (GGS) ou Erfi, afin d'explorer les interactions entre la religion (mesurée par la pratique, l'appartenance à la religion catholique en France et au protestantisme et au catholicisme en Grande-Bretagne), le niveau d'instruction et la fécondité des femmes nées entre les années 1920 et 1960. En Grande-Bretagne, un niveau d'études élevé diminue plus souvent les probabilités de maternité chez les femmes appartenant à une religion que les autres, qu'elles soient ou non pratiquantes (cet effet d'interaction n'est pas retrouvé en France). Mais dans les deux pays, la religiosité atténue la relation négative entre le niveau d'instruction et la taille des familles. Alors que, pour les femmes sans appartenance religieuse, la relation est globalement négative, on constate une relation en U chez les catholiques pratiquantes. Les disparités de descendance finale selon l'appartenance et de la pratique religieuses sont plus prononcées chez les femmes les plus instruites, certainement à cause de perceptions différentes de la valeur et du coût des enfants.

Nitzan Peri-Rotem • Diferencias de fecundidad según la instrucción en Gran Bretaña y en Francia. El papel de la religión.

La instrucción femenina se asocia generalmente con una fecundidad (número medio de hijos por mujer) más baja y una tasa más elevada de infecundidad (proporción de mujeres sin hijos). Sin embargo, todavía no está claro si un nivel más alto de instrucción implica un comportamiento de fecundidad similar en las mujeres de diferentes confesiones con diferentes niveles de religiosidad. Para comprobar si ese es el caso, este estudio utiliza los datos de la British Household Panel Survey y la French Generations and Gender Survey para explorar la intersección de la religión (según la práctica religiosa, catolicismo en Francia y protestantismo y catolicismo en Gran Bretaña), la instrucción y los comportamientos de fecundidad observados en las mujeres nacidas de los años 1920 a los años 1960. En Gran Bretaña, un alto nivel de instrucción reduce la probabilidad de acceder a la maternidad más frecuentemente en las mujeres sin afiliación religiosa que en las mujeres afiliadas a una religión, efecto de interacción que no se observa en Francia. En los dos países la religión atenúa la relación negativa entre instrucción y descendencia final. Mientras que en las mujeres sin religión la instrucción y la fecundidad están correlacionadas negativamente, este estudio muestra una relación en forma de U entre instrucción y descendencia final en las mujeres de religión católica. Además, las diferencias en la fecundidad completa según la afiliación y la práctica religiosa son más pronunciadas entre las mujeres con un alto nivel de instrucción. Atribuimos estos resultados a las diferencias de percepción entre los grupos religiosos, en cuanto a los valores y los costos de los hijos.

Keywords: religion, religiosity, fertility, education, childlessness