



**HAL**  
open science

# Religious Socialisation and Fertility: Transition to Third Birth in The Netherlands

Caroline Berghammer

► **To cite this version:**

Caroline Berghammer. Religious Socialisation and Fertility: Transition to Third Birth in The Netherlands. *European Journal of Population / Revue européenne de Démographie*, 2009, 25 (3), pp.297-324. 10.1007/s10680-009-9185-y . hal-00535474

**HAL Id: hal-00535474**

**<https://hal.science/hal-00535474>**

Submitted on 11 Nov 2010

**HAL** is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

# Religious Socialisation and Fertility: Transition to Third Birth in The Netherlands

## Socialisation Religieuse et Fécondité: L'arrivée du Troisième Enfant aux Pays-Bas

Caroline Berghammer

Received: 1 October 2008 / Accepted: 27 April 2009 / Published online: 28 May 2009  
© Springer Science+Business Media B.V. 2009

**Abstract** Although previous studies have demonstrated that religious people in Europe have larger families, the role played by religious socialisation in the context of contemporary fertility behaviour has not yet been analysed in detail. This contribution specifically looks at the interrelation between religious socialisation and current religiosity and their impact on the transition to the third child for Dutch women. It is based on data of the first wave of the Netherlands Kinship Panel Study (2002–2004) and uses event history analysis. The transitions to first, second and third birth are modelled jointly with a control for unobserved heterogeneity. The findings provide evidence for an impact of women's current church attendance as well as religious socialisation measured by their fathers' religious affiliation, when they were teenagers. A religious family background remains influential even when a woman has stopped attending church. The effects of religious indicators strengthen over cohorts. Moreover, the combined religious make-up of the respondent's parents also significantly determines the progression to the third child.

**Keywords** Religion · Fertility · Third child · Netherlands · Event history analysis

**Résumé** S'il est bien établi que les croyants en Europe ont plus d'enfants que les autres, le rôle de la socialisation religieuse dans le contexte de la fécondité contemporaine n'a pas encore été analysé à ce jour. Cette étude s'intéresse au lien entre la socialisation religieuse et la religiosité actuelle, et à leur impact sur la probabilité d'agrandissement de deux à trois enfants de la descendance des femmes néerlandaises. Les données exploitées sont celles de la première vague du Panel Néerlandais d'Etude de la Parenté (the Netherlands Kinship Panel Study, 2002–2004). A l'aide des techniques de l'analyse des biographies, les probabilités

---

C. Berghammer (✉)  
Vienna Institute of Demography, Austrian Academy of Sciences, Wohllebengasse 12–14/6th floor,  
1040 Vienna, Austria  
e-mail: caroline.berghammer@oeaw.ac.at

d'agrandissement de rang 1, rang 2 et rang 3 ont été modélisées de façon conjointe, en contrôlant l'hétérogénéité non observée. Les résultats mettent en évidence l'impact de la fréquentation actuelle de l'église par les femmes et de leur socialisation religieuse, mesurée par l'appartenance religieuse de leur père quand elles étaient adolescentes. Il apparaît que la religiosité du contexte familial exerce une influence, même quand la femme ne fréquente plus l'église, et que les effets des indicateurs de pratique religieuse se renforcent d'une génération à l'autre. Enfin, l'appartenance religieuse conjointe des parents de la femme détermine significativement la probabilité d'avoir un troisième enfant.

**Mots-clés** Religion · Fécondité · Troisième enfant · Pays-Bas · Analyse biographique

## 1 Introduction

In demography, several theoretical concepts, among them most prominently the second demographic transition (e.g. Lesthaeghe and Surkyn 1988; Lesthaeghe 1995), have emphasised the importance of cultural norms and values in explaining demographic behaviour. Taking up this idea, the present study analyses the link between fertility behaviour and religion in the Netherlands. Its focus is on the progression to the third birth, a transition that has substantially declined. As a result, only around one quarter of women in the 1945–1965 birth cohorts have three or more children. We may hypothesise that couples opting for more than the modal number of two children exhibit distinctive demographic and socio-economic features, among them presumably also higher religiosity. This contribution specifically studies the interrelation between religious socialisation and current religiosity and their impact on the transition to the third child for Dutch women.

Differently from the United States where a large number of studies on the interrelations between fertility and religion exist,<sup>1</sup> only few studies have deliberately addressed this issue for European countries. In general, they agree on a positive correlation between religiosity and fertility ideals, intentions and actual fertility. Adsera (2006b) investigates religious variables as a correlate of the ideal number of children across different western countries. She ascertains that the ideal number of children of religiously affiliated men and women is significantly higher than that of their non-affiliated peers and finds differences between the denominations (pp. 279–281). Among younger cohorts, however, and in particular among women, the ideal number of children of Catholics does not differ significantly from that of mainline Protestants (p. 283). Adsera also concludes that church attendance is a strong predictor of a higher ideal number of children, especially for women, and a stronger determinant for younger generations than for older ones. Philipov and Berghammer (2007) studied the impact of several religious measures on fertility ideals, intentions and behaviour in 18 European countries. They confirm that

---

<sup>1</sup> A few studies on fertility and union formation considered religious socialisation (e.g. Janssen and Hauser 1981; Lehrer 2004).

belonging to a religious denomination is significant for the ideal number of children, but only find denominational differences in a few countries. Their findings show that church attendance proves to be slightly more important for predicting the ideal family size than affiliation and self-assessed religiosity. Moreover, they note a stronger effect of religiosity on fertility ideals than on intentions (p. 281). Apparently, religious people have a higher ideal family size and plan to have more children, but can we also observe an effect of religiosity on the actual number of children? Indeed, Philipov and Berghammer report a correlation between measures of religiosity and fertility behaviour in virtually all countries studied. So do Frejka and Westoff (2008), who show that the risk of having two or more children is associated with different measures of religiosity in different regions of Europe. In southern Europe, church attendance significantly determines the progression to higher order births, while the measure of the importance of religion is most relevant in western Europe (p. 26). Based on country-specific analyses, Adsera (2006a), Brose (2006), Heineck (2006) and Régnier-Loilier and Prioux (2008) prove that there is a link between religiosity and fertility in Spain, West Germany, Austria and France.

During the past two decades, a number of studies examined the transition to the third birth in several European countries (Britain: Wright et al. 1987, Ní Bhrolcháin 1993; Turkey: Yavuz 2006; Sweden: Hoem & Hoem 1989, Heckman and Walker 1990, Murphy 1992, Berinde 1999) as well as comparatively for 15 countries (Callens and Croux 2005). These studies were interested in establishing the individual characteristics that are conducive to having more than the usual number of two children. Theories on the value of children claim that parents attach different values to children of different birth order. When parents consider having a third child, cost and benefit considerations become increasingly important, as Fawcett asserts (1983, p. 444). Interpreted from the perspective of the second demographic transition, studies on third births aim to investigate the characteristics of parents who progress to a third child and thus give family life and bonds priority over individual autonomy and flexibility. However, having just one child more than most other families is still less deviant than having four or five children.

In general, studies on third birth that included various measures of religiosity among the explanatory variables indicate a positive correlation between religiosity and this parity transition. Corman (2000) found a significant effect of parents' religiosity on third-birth intensities for Swedish men, but not for women. French men and women for whom religion was important at the age of 18 are also more likely to have a third child. Hoem et al. (2001) report a positive association between self-assessed religiosity and third-birth risk for Austrian women, which is far stronger than for second births (Prskawetz and Zagaglia 2005, p. 152–153). A study on the Czech Republic provides evidence for a particularly strong effect of church attendance on the transition to a third birth. The risk of this transition for women attending church services at least once a week is twice as high as that of women attending services less frequently (Pikálková 2003, p. 872).

Until the early 1960s, the Netherlands stood out by its comparatively high fertility rate. Only a few countries in central and western Europe—namely Ireland, Portugal, Poland and Slovakia—exceeded or reached similarly high levels as the Dutch period total fertility rate (TFR) of 3.12 in 1960 (EUROSTAT 2006, p. 76).

Van Heek (1956) and Buissink (1971) suggested that the exceedingly high fertility levels of Catholics were the main drivers behind the Dutch exception. Using more appropriate data, van Poppel (1985) and Engelen and Hillebrand (1986) were able to confirm the important role of Catholic fertility.

However, the picture reversed completely in just one decade. By the mid-1970s, the Dutch fertility rate had almost halved and was well below the European average at that time (1975: Netherlands 1.66, EU-25 countries 2.02; EUROSTAT 2006, pp. 73 and 76). Compared to other European countries, the TFR currently stands at the moderately high level of 1.72 (2006 and 2007; CBS 2009). Regarding cohort TFR, the number of children per woman already started to decline in the cohorts born from 1920 onwards. This decrease gained momentum for the cohorts born between 1933 and 1947. Then the fertility level remained fairly constant at a value of around 1.9 until the birth cohort of 1960. Only the most recent cohorts that have (almost) completed childbearing show signs of decline (Festy 1979; Beets 1993; own computations based on CBS 2007 and EUROSTAT 2007).

The development from a high to a low-fertility regime is partly due to a drastic downturn in higher order births, rendering them an important study object. Up to and including the birth cohort 1938, at least 40% of all Dutch women had three or more children and thereby exceeded the share of two-child mothers. From the birth cohort 1939 onwards, two children became more frequent than children of parity three or higher. In the cohorts born between 1945 and 1965, the share of mothers with three and more children oscillated between 22.0% and 25.7%. A similar trend emerged for the parity progression ratio to the third birth. In the 1935 birth cohort, half of all mothers with two children continued childbearing. This fraction dropped sharply to about 30% in the cohorts born in the late 1940s. Subsequently, the progression to third births slightly rose up to 38% in 1958 and then continued to gradually decline (own computations based on CBS 2007 and EUROSTAT 2007).

The present study mainly addresses the following questions: Do religious upbringing and current religiosity have an impact on the transition to the third child? If so, which of the two aspects has a stronger effect? How does the interplay between past and current religiosity determine the probability of having a third child? How do these effects differ by cohorts and by the combined religious make-up of parents during the respondents' adolescent years?

This discrete time event history analysis is based on data from the first wave of the Netherlands Kinship Panel Study, which was mainly conducted in 2002/2003. The total sample contains 8,161 respondents (4,741 women and 3,420 men) aged 18 to 79. I included women who were at most 65 years old at the time of the interview. 3,974 women were at risk of a first birth, 2,658 of them were at risk of having a second birth and 2,086 of these were at risk of having a third child. First, the transition from second to third birth was estimated as a single process. In the second step, the probabilities of experiencing a first, second and third birth were modelled jointly. I added a control for unobserved heterogeneity components that simultaneously affect the three processes.

In the following sections, I shall first discuss why current religiosity and religious socialisation can be assumed to have an impact on people's fertility behaviour and outline my hypotheses. The empirical part starts with a presentation of the data and

measures, which is followed by a description of the statistical method I used for analysing the data. The findings and results of the models are presented and interpreted in the subsequent section. A summary concludes the article.

## 2 Conceptual Background and Research Hypotheses

The question on the reasons for the link between religion and fertility has been repeatedly addressed (e.g. McQuillan 2004; Chatters and Taylor 2005; Philipov and Berghammer 2007). The following considerations are most pertinent for the Christian religion. Due to the small number of adherents to other religions in the dataset, my empirical analysis only refers to this group.<sup>2</sup>

The starting point is frequently the pronatalist and pro-family Christian teaching, which is well documented in the Bible and other texts. Even though adherents may not implement all parts of the teaching, it can be assumed that they tend to concur with the views of their church.

Secondly, the regular gathering of the community has been inherent to the Christian faith from its very beginning. Church networks are relevant for childbearing in several ways. First of all, members of church networks exchange emotional, tangible, informational and spiritual support (Taylor and Chatters 1988; Ellison and George 1994; Krause et al. 2001; Chatters et al. 2002). Researchers have confirmed the relevance of social support for fertility decisions (Schoen et al. 1997; Bühler and Philipov 2005; Philipov et al. 2006). Furthermore, the plausibility of shared Christian norms and values is continuously affirmed through communication with co-religionists, collective rituals and pastoral indoctrination (Berger 1969). For example, the high appreciation of motherhood and a high value attached to children are sustained through collective recognition. Moreover, contact with large families influences the perceptions about the ideal family size and, in turn, the likelihood of a higher number of children. Procedures of social regulation and control further promote compliance.

Religious coping is the third factor accounting for a link between religion and fertility. One of the functions assigned to religion is assisting believers to cope with uncertainty and life stress (e.g. Pargament et al. 2000). This constitutes a crucial component of psychological well-being (Diener et al. 1999, pp. 285–286). Having children is a decisive point in people's life that potentially involves uncertainty. Coping with this challenge could be easier for religious people if they find comfort in their religion. Research on religious coping frequently deals with illness and has widely neglected family events. The study by Ventura and Boss (1983) on the coping strategies of families who have a baby of two or three months constitutes an exception. The authors distinguish being religious, thankful and content as one coping strategy. Recent research points out the importance of considering subjective well-being (Philipov et al. 2006) and uncertainty as factors in understanding union

---

<sup>2</sup> Among the non-Christian religions in the Netherlands, the most numerous adherents are Muslims, comprising about 5.8% of the population in 2005, and Hindus who amount to about 0.6%. Both religions registered marked increases during the previous decades. For instance, in 1980, they had represented 1.7% and 0.2% of the Dutch population, respectively (Becker and de Hart 2006, p. 34).

formation and fertility. Uncertainty may take different forms, ranging from economic uncertainties (Kohler et al. 2002; Adsera 2005; Mills and Blossfeld 2005) to partnership instability or not being able to live up to expectations in childrearing (Fliegenschnee 2006).

Previous research suggests that the influence of religion on fertility is stronger in more secularised contexts, based on the argument that long-standing secularisation renders church attendees a rather select group (Adsera 2006a). Until the mid-1960s, belonging to a certain religious denomination markedly shaped everyday life in the Dutch system of 'pillarisation'. Starting at the end of the nineteenth century, Dutch society had become increasingly segmented according to adherence to the Protestant or Catholic faith or no religion at all, all of which had developed their own societal institutions (Bryant 1981; Dekker and Ester 1996). Later on, the rapid erosion of this system went along with an increase in the share of unaffiliated people. Nowadays, the Netherlands is notorious for its very high level of non-affiliated people, amounting to around 40% of the population (Statistics Netherlands 2007, p. 116). Church attendance also plummeted. In 1970, the Dutch Reformed Church had a comparatively low level of 50%<sup>3</sup> of all members attending church at least every second week, while Catholics stood at 70% and the conservative stream of the Protestant churches, i.e. the Calvinists,<sup>4</sup> at 90% at that time (Becker and Vink 1994 cited in Lechner 1996, p. 256). The Dutch Reformed had already ceased to regularly go to church earlier on. Though church attendance among the Dutch Reformed continued to weaken after 1970, the decrease was clearly less pronounced than among the Catholics. The Calvinists did best in attracting their members to church. Like other comparable surveys, the Netherlands Kinship Panel Study shows that around 20% of all Dutch Catholics attend church at least once a month as compared to 36% of the Dutch Reformed and 73% of the Calvinists.<sup>5</sup>

My main interest is to examine the interplay between religious socialisation and present religiosity and to study the impact of these two components on the transition to the third child. Various studies corroborate the substantial impact of parents' religiosity on their children's religious trajectory. The literature offers two main explanations for the transmission of values and behaviour from parents to children: social learning and status similarity (Glass et al. 1986, p. 686; Moen et al. 1997, pp. 282–283; Grusec et al. 2000; Barber et al. 2002, pp. 54–56). Social learning occurs as parents serve as role models for their children who learn from their behaviour and verbalised attitudes. This effect can be supported by active parental efforts to impose their behaviour and views on their children through affirmation

<sup>3</sup> It is a well documented fact that the level of church attendance is overestimated in surveys (e.g. Hadaway et al. 1993; Marler and Hadaway 1999). The numbers are nevertheless useful for comparing denominations and tracking the general trend.

<sup>4</sup> The Dutch Reformed Church (Nederlandse Hervormde Kerk) was the main church that originated from the reformation in the sixteenth century. Two important secessions of conservative streams took place in the nineteenth century. Most of the secessionists confederated and founded the Reformed Churches in the Netherlands (Gereformeerde Kerken in Nederland) in 1892, further denoted as Calvinists.

<sup>5</sup> More trustworthy estimates obtained with other methods report around 8% regular churchgoers among the Catholics (KASKI 2007) and 21% among adherents to the Protestant Church in the Netherlands, which unites large parts of the Dutch Reformed and the Calvinists (Becker and de Hart 2006, p. 32).

and negative sanctions. Similarity between parents' and children's socio-economic status, i.e. ethnicity, education, occupational status and economic resources, also facilitates the transmission of values and behaviour across generations. In this context, Kalmijn et al. (2006) stress the significance of opportunity structures into which children can be integrated. Children who get embedded in a church community become familiar with the rituals, form friendships and potentially find a marriage partner there (p. 1348).

The intergenerational transmission of religious values and behaviour is obviously not complete in all cases. For the Netherlands, Need and de Graaf (1996) found that many young adults left the church in their late teens and early twenties, while this was rarely the case at higher ages (pp. 93 and 96). Te Grotenhuis and Scheepers confirmed this conclusion (2001, p. 602) and additionally found that church attendance tends to be reduced between ages 14 and 26 with a strong peak around 18/19 (p. 597). On the other hand, it is very rare for people who were not exposed to a religious parental home to adopt religious views and activities themselves (Voas and Crockett 2005, pp. 21–22). We can, therefore, assume that currently religious people form a subgroup of those who were socialised in a religious way. They were selected according to certain characteristics and are still subject to church influences. *Hence, I anticipate that the impact of actual religiosity on third-birth intensities exceeds that of religious socialisation (Hypothesis 1)*

The dataset at hand offers three measures of present religiosity: affiliation, frequency of attending religious services and membership in a religious or church association. Though they were most crucial in previous decades, denominational fertility differences have become by and large negligible ever since the mid-1960s (Somers and Van Poppel 2003). Indicating a religious affiliation can be purely nominal. The share of nominal Christians seems to be highest among the Dutch Catholics who have the lowest share of churchgoers. It might seem surprising that so many of those who do not regularly attend mass nevertheless state that they are Catholics, but we can speculate that this behaviour is rooted in their former minority status and that Catholicism therefore is an important marker of their cultural identity. Church attendance, by contrast, involves active participation which only a subgroup of affiliated persons is willing to undertake. Several publications indicate that in European countries church attendance is more predictive of fertility ideals and behaviour than affiliation (Adsera 2006b; Philipov and Berghammer 2007). Respondents who confirm that they are a member in a religious or church association may think of a range of different groups or organisations. Due to this large variation, members will presumably not behave very differently from those who do not belong to any such association. Hence this measure is assumed to be less determining for the transition to a third birth than church attendance. *Therefore, I expect that church attendance is a stronger predictor of progression to third birth than religious affiliation or membership of a religious or church association (Hypothesis 2)*

My third hypothesis is based on the argument that religious upbringing continues to have a bearing on fertility behaviour, even if religious participation has been abandoned. Internalisation of values in the formative years may be deeply rooted. Furthermore, parents might still impose control on their grown-up children (Axinn

and Thornton 1993) and childhood friends and acquaintances might also influence them. *Thus, religious socialisation has an influence even if the person is no longer engaging in religious activities (Hypothesis 3)*

The impressive extent of the decline in religiosity is reflected in the decrease of religious socialisation over birth cohorts. As religiosity has eroded during the past decades and has left the religious an increasingly select group, it seems reasonable to expect that it has a differential influence on the transition to the third birth by cohorts. *Past and current religiosity are more salient predictors of third births for younger than for older cohorts (Hypothesis 4)*

My last hypothesis relates to the impact of the parents' combined religious make-up at the time the woman was 15 years old on her later fertility behaviour. Based on the arguments presented so far, the third-birth intensities are presumed to be lowest, if neither parent has any religious affiliation. But which outcome can we expect when the respondent grew up with religiously homogeneous versus heterogeneous parents? If we assume that both partners in a heterogeneous parental couple have the same relative influence, the respondent's final decision is expected to lie somewhere between the two positions. The underlying reasoning draws on the so-called 'bargaining effect'. Decisions in such areas as female employment or fertility are the result of a compromise between the partners (Lehrer 1996a, p. 175; Lehrer 1996b, pp. 147–148). This means that parents' religious heterogeneity can either enhance or decrease fertility as compared to a homogeneous affiliated parental couple, depending on the kind of denominations involved, with those holding more pro-natalistic views inducing a higher risk. This reasoning is also valid if only one parent is religiously affiliated. In most cases, this probably implies that the third-birth risk is somewhere between that of women whose two parents are non-affiliated versus those whose two parents are affiliated.

In further specifying this hypothesis, we can add that the marriage of an affiliated and a non-affiliated person might signal that religion is not of prime interest to the partner adhering to a religion, otherwise it would have been a stronger selection criterion for choosing a spouse. On the other hand, not giving up religious affiliation in a country with a high degree of secularisation and a non-religious spouse might indicate stable beliefs. As the two last mentioned considerations would influence fertility behaviour in different directions, the original hypothesis need not be revised.

*Summing up, the risk of having third child is anticipated to be lowest for respondents with non-affiliated parents, followed by those with only one affiliated parent. Respondents with religiously heterogamous parents and those whose two parents are affiliated to the same denomination constitute the groups with the highest third-birth risks, depending on the denominations involved (Hypothesis 5)*

### 3 Data and Method

#### 3.1 Netherlands Kinship Panel Study

The data used in this study were taken from the first wave of the Netherlands Kinship Panel Study (NKPS), which was conducted between 2002 and 2004

(Dykstra et al. 2005) and is a random sample of 8,161 individuals (4,741 women and 3,420 men) living in private households in the Netherlands. The respondents were 18 to 79 years old.

The data were collected in two stages. First, the respondents gave computer-aided personal interviews (CAPI). Then they filled in a self-completion questionnaire. The dataset contains complete fertility and relationship histories and a wide range of socio-economic variables. It is also particularly rich in questions on religiosity. These items were part of the self-completion questionnaire designed to minimise response bias. The information includes data on religious denomination, frequency of church attendance, membership of a religious or church organisation and importance of religion and the church at age 15. Additionally, the respondents were asked about the religious denomination their mother and father belonged to, when they were 15 years old.

The low response rate of 45% is comparable to other Dutch surveys and can partly be explained by high male non-response. Of all respondents participating in the study 92% returned the self-completion questionnaire.

### 3.2 Questions Pertaining to Religion

Let us now take a closer look at the four questions dealing with religion. The first question is about the respondent's and his/her mother's and father's religious affiliation: *"Do you count yourself as belonging to a particular faith, religious denomination or church? If so, which one? Please also indicate whether this was the case for your father and mother when you were 15 years old. No religion, Roman Catholic, Dutch Reformed Church, Calvinist (synodal), Other Calvinist denominations (e.g. Christian Reformed, Dutch Calvinists, Reformed Community), Evangelical church denominations (e.g. Full Evangelical church, Pentecostal church, Baptists, Community of the Moravian Brethren), Other Christian church denominations, Islam, Judaism, Hinduism, Other."*

Like the other religious variables, affiliation to a certain religion is studied in a cross-sectional way, which limits me to treating this variable as time-constant. In fact, there is evidence for the Netherlands that changes in religious affiliation follow a cohort rather than an age-path (Need and de Graaf 1996, pp. 93 and 96; Te Grotenhuis and Scheepers 2001, p. 602). However, as studies on this issue are scarce, it is not possible to draw definite conclusions. Hence inferring causality is not fully warranted.

As a retrospective measure, parents' affiliation at the time the respondent was 15 years old is not subject to such considerations. Yet two limitations have to be noted: selective recollection of respondents and the question whether they would report an affiliation if their parents were baptised but did not practise their religion (Adsera 2007, p. 228).

The following levels were constructed for using this variable in the statistical analyses: *no religion, Roman Catholic, Dutch Reformed, Calvinist (synodal), Calvinist (orthodox)* and *others*. I decided to keep the orthodox Calvinists as a separate category because the descriptive analysis showed that their fertility levels markedly differ from those recorded for the other Protestant groups. Moreover, in

2004, the synodal but not the orthodox Calvinists merged with the Dutch Reformed Church.

The next question addresses the frequency of attending religious services and thus serves as a measure for the degree of collective religious practice: “*About how often do you currently attend services at a church or community of faith? Hardly ever/never, once or a few times a year, once or a few times a month, once or a few times a week.*” This question permits us to draw conclusions on how close respondents are to the church, to which extent they agree with and are exposed to its teaching and, presumably, integrated into a church network. However, church attendance need not reflect personal conviction, but might also be driven by convention or even social pressure. This might be less relevant in urban areas, but more pronounced in the countryside or in regions where orthodox Calvinism prevails. Two considerations are particularly noteworthy when utilising this measure. First, church has a more central position in Catholicism than in Protestantism. Catholics are thus obliged to attend church services on Sundays and holidays, while Protestants attach greater value to such other expressions of faith as reading and interpreting the Bible. As the differences are not crucial, I shall utilise this measure uniformly. Second, church attendance was only measured at the time the survey was done. Strictly speaking, this rules out conclusions on causal relations. However, analyses pertaining to European countries unanimously state that church attendance tends to be reduced in young adult age and remains thereafter, at least throughout childbearing age (Lesthaeghe and Surkyn 1988; Te Grotenhuis and Scheepers 2001; Tilley 2003; Voas and Crockett 2005; Crockett and Voas 2006). Some US studies are in line with this finding while others emphasise the changes of church attendance with age.

I kept the original answering categories for my statistical analysis: *hardly ever or never, once or a few times a year, once or a few times a month, once or a few times a week*. Only women belonging to a Christian denomination were included in this variable, i.e. the denominations already specified plus Evangelical and other Christian church denominations. This restriction is justified by the rather homogeneous meaning of church services within this group.

Respondents who affirmatively answered the question “*Are you a member of any of the following clubs or voluntary associations?...Religious or church association*” may have thought of a range of different clubs or associations, e.g. Bible study groups, parental or youth groups organised by the church, ecumenical discussion groups, membership in the board of a religious school or subscription to a religious periodical. I used the response categories of *yes* and *no* in my regression models.

In the last question, the focus is on religious socialisation: “*At the age of 15: In our home, issues linked with religion and the church were considered to be very important. Strongly agree, agree, neither agree nor disagree, disagree, strongly disagree.*” Parents’ key role in the transmission of religious values to their children has been repeatedly confirmed. Kelley and de Graaf (1997) found that in secular nations like the Netherlands—more than in religious ones—the family is of paramount importance for religious socialisation. Contact with religion, for example during religious education at school, through religious peers or religious

festivities, does not come naturally in such a context. The family is usually the only institution that is capable of transmitting religious world-views and accustoming children to religious practices and a religious surrounding. In the empirical analysis, I recoded the originally five answering categories of this variable into three, namely (*very*) *important*, *middle*, (*very*) *unimportant*.

### 3.3 Method

The technique used in this study is event history analysis, which models the rate of occurrence of an event. This rate indicates the risk for the event to occur per time interval, provided the individual is still at risk at the start of the interval. According to the information available in the data set, time is measured in years. The effects of the covariates indicate the factor by which this baseline hazard is proportionally shifted. In this analysis, the key issue are the effects of the religious variables rather than the shape of the baseline hazard. Modelling was done in two different ways. As a first step, a model for the transition to the third birth was estimated separately. The population at risk were women at parity two and the baseline hazard referred to the years since the birth of their second child. However, previous studies (e.g. Kravdal 2001; Kreyenfeld 2002) demonstrated that first and second child mothers, respectively, are selected along certain criteria, among them perhaps greater family proneness. This trait is not captured by the covariates included in the equation for the third birth, but remains unobserved, which is why parameter estimation leads to biased results. Studying the effect of educational level on third birth rates in Norway, Kravdal (2001) proposed modelling the transition to first, second and third birth simultaneously and to add a common factor for unobserved heterogeneity to each of the equations as a control for these characteristics. In cases of repeated events, such as consecutive births, sufficient information for each individual is then available and renders identifying unobserved factors unproblematic. It does not seem reasonable to assume that the births experienced by one individual are independent events, but rather that shared factors influence all of them. I therefore assumed the person-specific unobserved heterogeneity to be identical in all three equations and to be normally distributed with a mean of 0 and a variance of  $\sigma^2$ . The test examines if this component is positive and significantly different from zero. Therefore, as a second step, the three parity transitions were estimated in a joint model which also includes an unobserved heterogeneity term. The analysis was conducted using the statistical software package aML 2.09 (Lillard and Panis 2003).

As the information on childbirth is only available on an annual basis, I used a discrete time logit model (Allison 1984, p. 17). I split the basic time factor, time elapsed since age 15, since first or second birth, into intervals which permitted me to separately model the risk for each time interval. I assumed that the hazard is constant throughout one interval but can vary between different intervals. The women were considered to be in the population at risk either until the time the birth occurred or until they were censored at age 45 or at the time of the survey.

Apart from the explanatory variables on religiosity, the following five time-constant covariates were included in the models: age at first birth<sup>6</sup> (only in second and third-birth models), interval between first and second birth<sup>7</sup> (only in third-birth models), birth cohort,<sup>8</sup> education<sup>9</sup> and number of siblings.<sup>10</sup> Union status<sup>11</sup> entered the regression equations as time-varying regressor. I also experimented with the inclusion of the variables age at second birth, country of residence at age 15, urban or rural residence at age 15, sex composition of previous children and if the respondent ever had a paid job, but since they did not further enlighten the link between religiosity and progression to third birth I excluded them in the models presented here.

The analysis is solely based on the biological children the women had either with the current, the previous or without a steady partner. Records with adopted children, twins at first or second birth, respectively, and cases in which the first or second child died before the birth of the second or third one were excluded. Women were also censored if they were below 15 or above 45 years of age at the birth of their first, second or third child. When first and second or second and third birth occurred in the same year or the first or second birth took place in the year of the survey, records were omitted due to non-exposure. Furthermore, respondents who were older than 65 at the time of interview were excluded from the analysis. This approach was chosen because I assumed that religiosity is prone to changes after that age. Women are exposed to a shift in their social position (mainly withdrawal from the labour force) and changes in time allocation. Deteriorating physical abilities might prevent them from participating in certain activities and there is a high likelihood that they will face existential questions as their own life and that of others nears its end. The final total number of women included in the analysis for the first child was 3,974, for the second child 2,658 and for the third child 2,086 (unweighted).

---

<sup>6</sup> The respondents were divided into three categories (young, middle and old) in the proportion 1:2:1. Young women were defined as those aged 16–23 at the birth of their first child, middle-aged women as those 24–29 and old women as those aged 30–41 years when they had their first child.

<sup>7</sup> The constructed time intervals are 0–1, 2, 3, 4 and 5+ years.

<sup>8</sup> The respondents were assigned to the following birth cohorts: 1937–1944, 1945–1954, 1955–1964 and 1965–1979.

<sup>9</sup> The levels of education were constructed according to the International Standard Classification of Education (ISCED). Completed or incomplete elementary school (ISCED 1), lower vocational and lower general schooling between ages 12–15 or 16, respectively (ISCED 2) were defined as low education. Intermediate education comprises completed intermediate general secondary, upper general secondary and intermediate vocational training between ages 15/16 and 17–20 (ISCED 3). High education refers to women who accomplished their higher vocational, university or post-graduate training taking place between ages 17/18 to 20–24 (ISCED 5). Being in education constitutes the fourth category. Education, even though in principle time-varying, enters as a time-constant covariate, which should not be problematic as very few people complete their education after the birth of their second child (Hoem et al. 2001, p. 252).

<sup>10</sup> I differentiate between respondents who have 0, 1, 2 or 3 and more siblings.

<sup>11</sup> Union status comprises the following states: no union, cohabitation, first order marriage, higher order marriage.

Table 1 lists the percentage distribution of the respondents within levels of the religious variables by parity. It shows all cohorts (1937–1979) as well as older (1937–1954) and younger cohorts (1955–1979) separately. The choice of cohorts is based on the state of religion during their socialisation. The system of pillarisation ended when the youngest among the 1937–1954 cohorts were adolescents and thus still exposed to a strong religious influence unlike the younger cohorts that grew up when religion was waning.

#### 4 Descriptive Analysis

First, I present the parity distribution by importance of religion in the parental home at age 15 and current church attendance (Fig. 1). The highest panel represents women who were socialised in a religious parental home and still frequently go to church. This group has the lowest share of childless women and one-child mothers. Almost 60% of these women have three or more children. The bottom bar corresponds to women who were not exposed to religious socialisation and do not attend church. Childless women are clearly most numerous in this group, which has the largest share of two-child mothers. Only 22% give birth to a third or higher order child. The parity distribution of women who were raised in a religious environment but abandoned church attendance later in life is somewhere between the two groups, although their fertility behaviour is closer to that of the non-religious women. Thirty percent of these women have a third or higher order child. The number of those who were not exposed to religious socialisation during adolescence but attended church at the time of the survey is negligible. This first analysis indicates that past religious influences might be decisive for childbearing decisions.

Figure 2 shows the cumulative progression to the third birth by combining the same two variables. Older and younger cohorts are presented separately. The differences in the propensity to have a third child described above are reflected in the length of the birth interval between the second and third birth, which follows the same gradient, i.e. the time until the third birth is shortest for regular church attendees. Due to fecundity limitations, a deliberate decision for a third child frequently implies close spacing of all previous births. This point is especially valid for the Netherlands, where the mean age at first birth is high. The figures for women who do not attend church and either were or were not brought up in a religious way differ by around 7.6% and 5%, respectively. They also show a substantial gap to current church attendees. The levels of the curves are notably elevated for the younger cohorts. This is in agreement with Hypothesis 4, which predicts a larger impact of religious indicators for younger cohorts as compared to older ones. The selection of religious people across cohorts is also reflected in the relative size of the category ‘Religious socialisation and church attendance’. Among the older cohorts the share is 21%, but only 12% among the younger cohorts. The group with no religious socialisation and no church attendance has a share of 50% among the older, but 66% among the younger cohorts.

**Table 1** Percentage distribution of Dutch women within categories of the religious variables by parity (weighted)

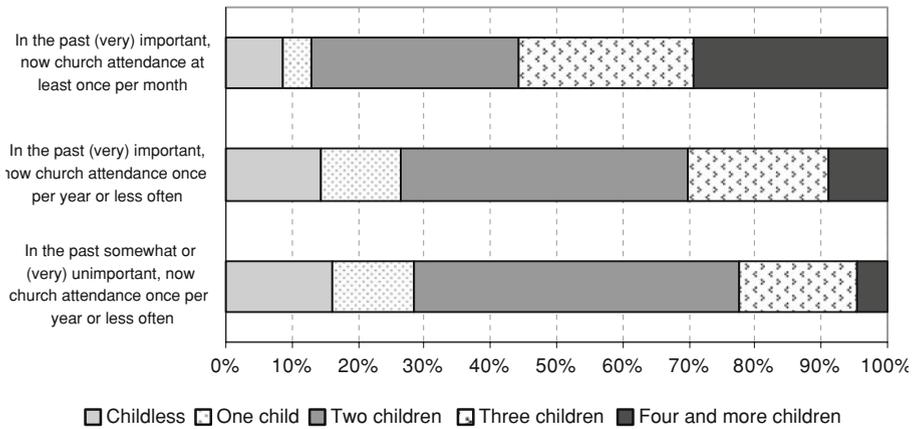
	All cohorts (n = 3,509)					Older cohorts (n = 1,052)					Younger cohorts (n = 2,111)				
	Parity 0	Parity 1	Parity 2	Total %	Parity 0	Parity 1	Parity 2	Total %	Parity 0	Parity 1	Parity 2	Total %			
<i>Importance of religion at age 15 in the parental home</i>															
(Very) Unimportant	40	15	45	41	13	12	75	30	38	18	44	46			
Neither—nor	33	14	53	20	14	11	74	21	34	16	50	21			
(Very) Important	25	11	64	30	11	10	79	43	28	12	60	26			
No answer	29	16	55	8	8	8	84	7	22	22	56	8			
<i>Membership in religious or church association</i>															
No	37	15	48	61	13	13	74	49	36	17	47	66			
Yes	23	9	68	11	11	4	85	14	22	13	65	10			
No answer <sup>a</sup>	28	14	59	28	11	11	78	36	29	17	54	24			
<i>Religious affiliation</i>															
None	40	14	45	40	16	13	71	34	41	16	43	43			
Roman Catholic	28	14	57	25	13	12	75	28	29	17	54	25			
Dutch Reformed	25	8	67	10	9	7	84	13	28	10	63	8			
Calvinist	18	5	77	3	10	3	87	5	23	7	70	2			
Calvinist (orthodox)	29	15	55	4	3	9	88	4	30	21	49	4			
Other religion	36	14	50	7	14	11	75	6	27	17	56	7			
No answer	29	16	55	11	6	11	83	10	25	21	54	11			
<i>Church attendance</i>															
Hardly ever/Never	38	15	47	50	14	14	72	47	41	17	43	52			
At least once a year	29	13	58	22	11	11	78	21	27	15	58	23			
At least once a month	21	9	69	7	11	5	84	11	20	15	65	6			
At least once a week	25	8	67	8	7	4	89	11	24	12	64	7			
Other religion	36	17	46	4	20	14	66	3	28	20	53	4			

**Table 1** continued

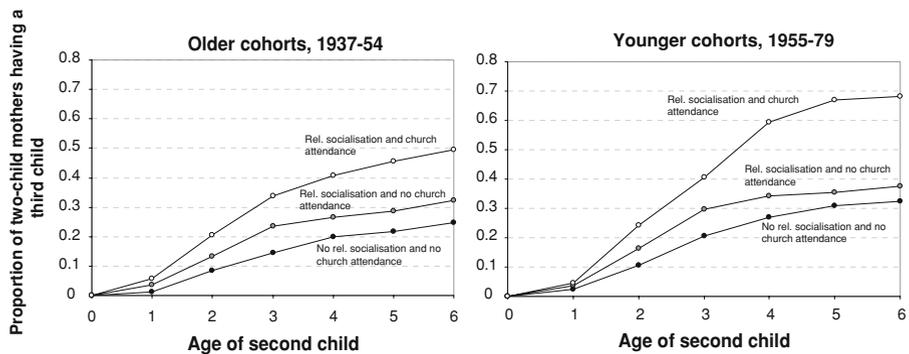
	All cohorts (n = 3,509)				Older cohorts (n = 1,052)				Younger cohorts (n = 2,111)			
	Parity 0	Parity 1	Parity 2	Total %	Parity 0	Parity 1	Parity 2	Total %	Parity 0	Parity 1	Parity 2	Total %
	No answer	29	16	54	8	8	8	84	7	22	22	56
<i>Father's religious affiliation</i>												
None	39	15	46	19	12	12	75	15	39	18	43	20
Roman Catholic	32	14	54	36	14	14	72	36	33	16	51	36
Dutch Reformed	29	10	61	15	13	8	79	17	32	12	57	14
Calvinist	27	8	64	6	14	4	82	8	33	12	55	5
Calvinist (orthodox)	27	18	55	5	5	9	86	5	29	25	47	5
Other religion	42	13	46	6	15	10	74	5	34	15	51	5
No answer	32	15	53	15	9	10	82	15	29	20	50	14

*Note:* All cohorts: 1937–1979, older cohorts: 1937–1964, younger cohorts: 1955–1979

<sup>a</sup> The high share of missing values is probably due to the fact that many respondents did not understand this question as it was listed shortly after the question on belonging to a religious denomination or church



**Fig. 1** Parity distribution of Dutch women aged 37 to 65 (cohorts 1937–1964) by importance of religion in the parental home at age 15 and church attendance (weighted)



**Fig. 2** Cumulative progression rate to third birth of Dutch women by importance of religion at age 15 and church attendance

### 5 Results and Interpretation

The main research questions are addressed by consecutive model fitting. My first strategy was to single out the most relevant aspect of religion for the transition to the third child by referring to past or current religiosity and to investigate the relations between the variables. I used the second set of models to determine whether religious socialisation has an impact even in the absence of present religiosity. In the third step, I tested the assumption that the effect of religion is stronger for younger than for older cohorts by performing the analyses separately for cohorts born from 1937 to 1954 and those born between 1955 and 1979. Finally, I studied the link between parents’ combined religious make-up and third-birth intensities.

## 5.1 Past and Present Religiosity

In the following, I shall only present the models, in which the three parity transitions were estimated jointly and unobserved heterogeneity was inserted (estimates on the transition to the third birth are available from the author upon request). As this factor is positive and significant in all cases, I conclude that the women indeed differ according to unobserved characteristics that influence fertility behaviour. Most importantly, however, the sizes of the coefficients increase. Omitting unobserved women-specific characteristics underestimates the link between religiosity and the decision to have a third child. As we do not know what the unobserved heterogeneity component represents, the interpretation of this finding is bound to be speculative. Let us start by assuming different shares of family-prone women in the religious versus the non-religious group. Children and the family play a central role in Christian faith and, as expected, the share of family-oriented women is higher in the religious than in the non-religious group. Supported by empirical evidence as shown in Fig. 1, this implies that religious women are more prone to opt for a first and second child than non-religious respondents. Besides the women's personal family orientation, 'religion-specific reasons' such as adapting behaviour of co-religionists, receiving support that facilitates the childbearing decision or normative pressure, e.g. from parents, may also play a role in the decision for a(nother) child. On the other hand, merely non-religious women with a family orientation select themselves into the group of one and two-child mothers. As a consequence, their share among mothers is larger than among childless women and they are, in turn, also more prone to have a third child. The stronger self-selection among non-religious women reduces the differences in the shares of non-family-prone women and decreases the effect of religiosity. The unobserved heterogeneity is interpreted as family proneness and the true effect of religiosity is only revealed when we control for it.

Model 1 in Table 2 deals with women's religious socialisation. The third-birth intensity of those in whose parental home religion was (very) important is 91% higher as compared to those where religion was (very) unimportant. Adding membership in religious or church associations in Model 2 confirms that members have a higher progression risk than non-members, even though this effect disappears once we add religious affiliation to the equation (Model 3). The third-birth intensity of Roman Catholics does not significantly differ from that of non-affiliated women, lending support to the notion that, in the Netherlands, Roman Catholicism mainly reflects cultural belonging. The coefficients of the members of the Dutch Reformed and the mainline Calvinists are fairly similar. Orthodox Calvinists have the highest progression risk, i.e. 2.40 times that of the reference category. However, when we introduce church attendance (Model 4), it absorbs most of the effects of the other variables, being strongly positive itself. The third-birth intensity increases with each level of church attendance and peaks at more than the double risk for women who attend church once or a few times a week as compared to those who never attend. Women who go to church once per year or month are closer in their progression risk than the other categories and located somewhere in the middle between the two extremes. The fact that religious affiliation is almost insignificant indicates that the differences between the denominations can primarily be attributed to the different

**Table 2** Association between measures of religiosity and third-birth rates of Dutch women born 1937–1979

	Model 1	Model 2	Model 3	Model 4	Model 5
<i>Importance of religion and church in the parental home at age 15</i>					
(Very) Unimportant	1	1	1	1	1
Neither—nor	1.29*	1.24	1.17	1.13	1.05
(Very) Important	1.91***	1.70***	1.49***	1.30**	1.17
<i>Membership in religious or church association</i>					
No	1	1	1	1	1
Yes		1.73***	1.27	0.97	1.02
<i>Religious affiliation</i>					
None			1	1	
Roman Catholic			1.13	0.82	
Dutch Reformed			1.89***	1.43**	
Calvinist			2.07***	1.35	
Calvinist (orthodox)			2.40***	1.45	
<i>Church attendance</i>					
Hardly ever/Never				1	1
At least once a year				1.67***	1.54***
At least once a month				2.08***	1.95***
At least once a week				2.82***	2.79***
<i>Father's religious affiliation</i>					
None					1
Roman Catholic					1.29
Dutch Reformed					1.64***
Calvinist					1.92***
Calvinist (orthodox)					1.99**
Unobserved heterogeneity	0.89***	0.88***	0.87***	0.86***	0.86***

Discrete time logit model (relative rates)

Controlled for age at first birth (only in second and third-birth models), interval between first and second birth (only in third-birth models), cohort, education, number of siblings, union status

Missing values and the category 'other religion' are not shown but were controlled for

Significance levels: \*  $P \leq 0.10$ ; \*\*  $P \leq 0.05$ ; \*\*\*  $P \leq 0.01$

intensity of religious practice. In other words, the observed disparities in fertility are not due to differences in teaching on childbearing and family-related issues but rather to differences in the women's devotion to the church and its teaching.

In the last model, the respondent's religious affiliation is substituted by another measure of religious socialisation, namely the father's affiliation at the time the respondent was 15 years of age. The father's affiliation yielded a stronger effect than that of the mother.<sup>12</sup> Except for Roman Catholics, all levels are significantly

<sup>12</sup> This finding is in line with those of Neuman (2007, p. 221) and Adsera (2007, p. 227) who report that differently to mother's practice, father's mass attendance when the respondent was age 12 had a positive effect on the latter's current family size.

different from the baseline category 'no affiliation'. Regarding the size of the coefficients, the denominations exhibit the same rank as in the respondent's affiliation. That father's religious affiliation is significant is a rather unexpected finding granted that the respondent's own affiliation did not evince any statistically significant association, when controlling for church attendance. Further analysis showed that when combining respondent's and father's affiliation as well as church attendance in one model, the father's affiliation also proved to be more important than the woman's own affiliation (model not shown). Bivariate analysis disclosed that respondent's affiliation and church attendance are more strongly correlated than father's affiliation and church attendance. Therefore, the results of the models support the interpretation that the father's affiliation reflects religious socialisation as opposed to current religiosity, which is measured by church attendance or respondent's affiliation. However, both measures are equally important.

To analyse this finding in more detail, I constructed and included an interaction between the father's and the female respondent's affiliation while controlling for church attendance. As shown by Model 6 in Table 3, the socialisation effect persists. On the one hand, the category of non-affiliated women comprises women whose fathers belonged to a certain religion and, on the other hand, those whose fathers were non-affiliated when they were 15 years old. The interaction term suggests that the third-birth risk of non-affiliated respondents whose father was Catholic or Dutch Reformed is about 50–60% higher as compared to those who have a non-religious family background.

We can conclude that the non-affiliated women consist of two groups: firstly, those without a religious family background who display the lowest third-birth intensity and, secondly, those with a religious family background whose third-birth intensity is elevated. As a consequence of this mixture, the non-affiliated women do not differ significantly from the affiliated women (Table 2, Model 4). However, if we incorporate the father's instead of the respondent's affiliation, non-affiliated women with an elevated risk due to their religious background are found in the same group as the affiliated ones and thus differ from those who are non-affiliated (Table 2, Model 5).

Model 7 pursues a similar strategy in that it comprises an interaction between past and current religiosity, the latter being represented by the respondent's church attendance. The findings lead to the same conclusion: women whose father was religiously affiliated during their adolescence and who do not regularly attend church show an elevated third birth rate as compared to their counterparts with a non-affiliated father. The probability of having a third child is even higher for women who still go to church.

Summarising, we can say that, in disagreement with Hypothesis 1, both religious socialisation and current religiosity are linked with having a third child. Among the measures of current religiosity, church attendance is a stronger determinant than religious affiliation and membership, as assumed in Hypothesis 2. Concerning religious socialisation, the father's affiliation is a more relevant predictor than the importance of church and religion in the parental home at age 15. The findings confirm Hypothesis 3, which predicts an effect of religious socialisation even if the person is currently not religious.

**Table 3** Association between father's affiliation and respondent's affiliation and church attendance, respectively, and third-birth rates of Dutch women born 1937–1979

Model 6				Model 7			
Father's affiliation	Respondent's affiliation			Father's affiliation	Respondent's church attendance		
None	None	1		None	Never/yearly	1	
Roman Catholic	None	1.48*		Roman Catholic	Never/yearly	1.52**	
Dutch Reformed	None	1.61*		Dutch Reformed	Never/yearly	1.64**	
Calvinist	None	2.26**		Calvinist	Never/yearly	2.47***	
Calvinist (orth.)	None	(1.04)		Calvinist (orth.)	Never/yearly	(1.49)	
Roman Catholic	Roman Catholic	1.25		None	Monthly/weekly	(1.67)	
Dutch Reformed	Dutch Reformed	1.91***		Roman Catholic	Monthly/weekly	2.49***	
Calvinist	Calvinist	2.00**		Dutch Reformed	Monthly/weekly	4.99***	
Calvinist (orth.)	Calvinist (orth.)	2.20**		Calvinist	Monthly/weekly	4.13***	
				Calvinist (orth.)	Monthly/weekly	6.78***	
Unobserved heterogeneity		0.86***		Unobserved heterogeneity		0.89***	

Discrete time logit model (relative rates)

Controlled for age at first birth (only in second and third-birth models), interval between first and second birth (only in third-birth models), cohort, education, number of siblings, union status, church attendance (in Model 6)

Missing values and the category 'other religion' are not shown but were controlled for

Brackets indicate that  $n < 50$

Significance levels: \*  $P \leq 0.10$ ; \*\*  $P \leq 0.05$ ; \*\*\*  $P \leq 0.01$

## 5.2 The Influence of Past and Present Religiosity over Cohorts

The subsequent models are fitted separately for older and younger cohorts. They compare women who were born between 1937 and 1954 ( $n = 939$ ) with those born between 1955 and 1979 ( $n = 1,147$ ). I hypothesised that, over cohorts, the behaviour of religious persons would become increasingly distinctive as compared to that of their non-religious peers since the secularisation process makes them an increasingly select group. The data support this assumption.

Model 9 reveals that, among the older cohorts, weekly and monthly church attendees have significantly higher third-birth intensities than women who never go to church. The coefficient for the yearly attendees is also relatively large. The effects gain in strength over the cohorts under observation. To compare all other groups to the lowest church attendance category for both cohorts, I changed the reference category. For women born between 1955 and 1979, the regression coefficients monotonously increase with the frequency of church attendance. In a surrounding characterised by low church attendance, the third-birth risk of yearly church attendees closely resembles that of the monthly church attendees in previous generations when both are compared to the non-attendees of their generations.

The results are less clear-cut for the father's affiliation (Model 11). The coefficients do not unanimously get stronger over cohorts. For the older cohorts, having a Catholic father versus a non-affiliated father did not yield any significant differences in the third-birth rate, while it did for the younger cohorts. However, the large effect size of the older cohort does not permit a final conclusion.

Introducing an interaction between father's affiliation and church attendance reveals that a religious background continues to exert an influence on fertility outcome even in case of no church attendance at present for the younger but not for the older cohorts (Model 13). In fact, young female non-churchgoers whose fathers belonged to a religious denomination during their adolescence are 72% more likely to proceed to a third birth than those who were not exposed to religious socialisation. Not surprisingly, the coefficients are even more elevated for those women who continued to attend religious services until the time of the survey. In general, the findings of these three models are in line with Hypothesis 4: the effect of religiosity on third births increases by cohorts (Table 4).

## 5.3 Parental Homogamy

The final step was to analyse whether differences in progression to a third birth are discernible based on the religious make-up of the respondents' parents. Hypothesis 5 assumes the following ranking from lowest to highest transition rates to third births: (1) respondents with non-affiliated parents, (2) respondents with only one parent adhering to a faith, (3) women with religiously heterogeneous or homogeneous parents depending on the kind of denominations involved. The findings only partly support this hypothesis.

The results obtained with Model 14, which contains an interaction between father's and mother's affiliation, do not confirm the assumption of differential fertility behaviour if both parents are not affiliated or one of them—mostly the

**Table 4** Association between measures of religiosity and third-birth rates of Dutch women born 1937–1979, by cohorts

	Model 8	Model 9		
	All cohorts	Older cohorts	Younger cohorts	
<b>Church attendance</b>				
Hardly ever/never	1	1	1 [1.52]	
At least yearly	1.57***	1.32	1.81***	
At least monthly	2.26***	1.72**	3.21***	
At least weekly	3.98***	3.69***	4.31***	
Unobserved heterogeneity	0.86***		0.86***	
	Model 10	Model 11		
	All cohorts	Older cohorts	Younger cohorts	
<b>Father's religious affiliation</b>				
None	1	1	1 [1.47]	
Roman Catholic	1.61***	1.42	1.76***	
Dutch Reformed	2.16***	2.25***	2.09***	
Calvinist	2.97***	3.08***	2.91***	
Calvinist (orthodox)	4.09***	(4.01)***	(4.35)***	
Unobserved heterogeneity	0.90***		0.90***	
		Model 12	Model 13	
		All cohorts	Older cohorts	Younger cohorts
<b>Father's affiliation Respondent's church attendance</b>				
None	Never/yearly	1	1	1 [1.34]
Affiliated	Never/yearly	1.61***	1.44	1.72**
None	Monthly/weekly	(1.67)	–	(3.52)
Affiliated	Monthly/weekly	3.94***	3.28***	4.77***
Unobserved heterogeneity		0.87***		0.86***

Discrete time logit model (relative rates)

Controlled for age at first birth (only in second and third-birth models), interval between first and second birth (only in third-birth models), cohort, education, number of siblings, union status

Missing values and the category 'other religion' are not shown but were controlled for

*Squared brackets* indicate the proportional shift relative to the same category of the older cohorts

*Brackets* indicate that  $n < 50$

Significance levels: \*  $P \leq 0.10$ ; \*\*  $P \leq 0.05$ ; \*\*\*  $P \leq 0.01$

father—does not indicate any belonging. Previous research has pointed out that women are more reluctant than men to leave the church (Te Grotenhuis and Scheepers 2001, p. 601). If this observation is due to the fact that women keep declaring a membership even if they are not convinced and practising, it could explain the results obtained with this model. Except for Roman

**Table 5** Association between parents' combined religious make-up and third-birth rates of Dutch women born between 1937–1979

Model 14	
Both none	0.96
One none	1
Both Roman Catholic	1.18
Both Dutch Reformed	1.60*
Both Calvinist	1.81**
Both Calvinist (orth.)	2.11**
Both Christian, heterog.	1.63
Unobserved heterogeneity	0.86***

Discrete time logit model (relative rates)

Controlled for age at first birth (only in second and third-birth models), interval between first and second birth (only in third-birth models), cohort, education, number of siblings, union status

Missing values and the category 'other religion' are not shown but were controlled for

Significance levels: \*  $P \leq 0.10$ ; \*\*  $P \leq 0.05$ ; \*\*\*  $P \leq 0.01$

Catholics, respondents with parents affiliated with the same denomination exhibit higher third-birth intensities than the reference group. Daughters of heterogamous parents—mostly consisting of one Roman Catholic and one Dutch Reformed—evinced, judging from the regression coefficient, a similar third-birth risk to their peers with homogeneous parents Table 5.

## 6 Summary

During the past decade, a number of studies investigated the link between religiosity and fertility in European countries. Meanwhile, it is a well-established fact that more religious people have a larger number of children. In the literature, little attention has been paid to the role of religious socialisation. This is surprising in view of the great relevance of family background as a determinant for adults' religiosity.

This study examines the associations between the interplay of past and present religiosity and progression to third birth using event history analysis. The parity transitions to first, second and third birth are modelled simultaneously and a factor representing unobserved heterogeneity is included to control for selectivity in progressing to a higher order child. Religious effects are stronger when using this method than when modelling the transition to the third child as a single process.

The expectation regarding religious adults raised in a religious parental home is clearly that their transition rate to the third child will be higher. But what can we predict for non-religious adults who were exposed to religious socialisation? Put in a nutshell, parents shape the religious views and ensuing family values of their children. Even if the children abandon religiosity later in their lives, they have been formed by the values internalised in their early years. Moreover, due to the strong

social component of religiosity, children socialised in a religious surrounding are also likely to have religious grandparents and other relatives. Religious parents tend to promote the integration of their children into church-run children's playgroups, choirs and similar groupings, where they also make friends. We may therefore assume that even if they are no longer practising their religion, religious social influences remain in place and exert an effect on their childbearing behaviour.

I started the empirical analysis by testing which religious indicator (among those referring to religious socialisation or current religiosity) is most relevant for the transition to the third child. Apparently, both church attendance and a measure of religious socialisation (namely the father's affiliation when the respondent was 15) have a strong impact. This result corroborates the importance of religion in the parental home for the children's reproductive behaviour. Tying in with previous evidence, church attendance seems to be a stronger indicator for fertility than other measures of religiosity (Adsera 2006b; Philipov and Berghammer 2007).

Another conclusion is that non-religious women consist of two groups: those with and those without a religious family background. The latter are characterised by the lowest third-birth intensities, while women who were exposed to religious influence during their adolescence show a significantly higher propensity to have a third child.

Moreover, I was able to demonstrate that the effect of religiosity strengthens over cohorts. This result is in line with Adsera's finding for Spain (2006a) and Régnier-Loilier and Prioux's (2008) finding for French women and supports the assumption that religious fertility differentials become progressively more apparent as the religious constitute an increasingly small and select group. This inference holds for measures of present religiosity as well as for an interaction between past and present religiosity.

Last but not least, the parents' combined religious make-up determines the decision whether to have a third child. Women whose two parents do not adhere to a religious faith exhibit the lowest progression risk. Unexpectedly, there is no difference with respect to respondents with one affiliated parent, mostly the mother. This finding might be explained by the fact that women are more reluctant than men to leave the church, even if their religiosity might have abated. Moreover, marrying a non-affiliated partner suggests that religion may not have been highly relevant in the first place. Apart from Roman Catholics, women with religiously homogamous parents or Christian heterogamous parents both display a higher third-birth hazard than those with one or two non-affiliated parents.

Despite the growing number of contributions on religiosity and fertility in Europe, several issues require more detailed research. First of all, the mechanisms explaining religious people's higher fertility are mostly based on speculation, while a thorough empirical analysis is still lacking. Secondly, the issue of causality remains unresolved. Theoretical reasoning and empirical results from the US context point to a two-way causality. Thirdly, even though we know about the deficiencies of religious measures, i.e. the over-reporting of church attendance in surveys, data for European countries are still inadequate.

**Acknowledgements** Many thanks to Michaela Kreyenfeld, Hill Kulu, Dimiter Philipov, Tomáš Sobotka, Arland Thornton and two anonymous reviewers for valuable comments on earlier drafts of the

article. I am also grateful to Sylvia Trnka for language editing. The Netherlands Kinship Panel Study is funded by grant 480-10-009 from the Major Investments Fund of the Netherlands Organization for Scientific Research (NWO) and by the Netherlands Interdisciplinary Demographic Institute (NIDI), Utrecht University, the University of Amsterdam and Tilburg University.

## References

- Adsera, A. (2005). Vanishing children: From high unemployment to low fertility in developed countries. *American Economic Review*, 95(2), 189–193.
- Adsera, A. (2006a). Marital fertility and religion in Spain, 1985 and 1999. *Population Studies*, 60(2), 205–221.
- Adsera, A. (2006b). Religion and changes in family-size norms in developed countries. *Review of Religious Research*, 47(3), 271–286.
- Adsera, A. (2007). Reply to the note by Neuman 'Is fertility indeed related to religiosity?'. *Population Studies*, 61(2), 225–230.
- Allison, P. (1984). *Event history analysis*. Beverly Hills: Sage.
- Axinn, W., & Thornton, A. (1993). Mothers, children, and cohabitation: The intergenerational effects of attitudes and behaviour. *American Sociological Review*, 58(2), 233–246.
- Barber, J., Axinn, W., & Thornton, A. (2002). The influence of attitudes on family formation processes. In R. Lesthaeghe (Ed.), *Meaning and choice: Value orientations and life course decisions* (pp. 45–95). The Hague: NIDI-CBGS Publications.
- Becker, J., & de Hart, J. (2006). *Godsdienstige veranderingen in Nederland. Verschuivingen in de binding met de kerken en de christelijke traditie*. Den Haag: Sociaal en Cultureel Planbureau.
- Beets, G. (1993). Demographic trends: The case of the Netherlands. In N. Van Nimwegen, J.-C. Chesnais, & P. Dykstra (Eds.), *Coping with sustained low fertility in France and the Netherlands* (pp. 13–42). Amsterdam/Lisse: Swets & Zeitlinger.
- Berger, P. (1969). *The sacred canopy. Elements of a sociological theory of religion*. New York: Anchor Books.
- Berinde, D. (1999). Pathways to a third child in Sweden. *European Journal of Population*, 15(4), 349–378.
- Brose, N. (2006). Gegen den Strom der Zeit? Vom Einfluss der religiösen Zugehörigkeit und Religiosität auf die Geburt von Kindern und die Wahrnehmung des Kindernutzens. *Zeitschrift für Bevölkerungswissenschaft*, 31(2), 257–282.
- Bryant, Ch. (1981). Depillarisation in the Netherlands. *The British Journal of Sociology*, 32(1), 56–74.
- Bühler, Ch., & Philipov, D. (2005). Social capital related to fertility: Theoretical foundation and empirical evidence for Bulgaria. *Vienna Yearbook of Population Research*, 2005, 53–82.
- Buissink, J. (1971). Regional differences in marital fertility in the Netherlands in the second half of the nineteenth century. *Population Studies*, 25(3), 353–374.
- Callens, M., & Croux, Ch. (2005). The impact of education on third births. A multilevel discrete-time hazard analysis. *Journal of Applied Statistics*, 32(10), 1035–1050.
- CBS (2007). *CBS StatLine*, Internet database of the Centraal Bureau voor de Statistiek, Voorburg/Heerlen. Accessed May and June, 2007 from <http://statline.cbs.nl>.
- CBS (2009). *CBS StatLine*, Internet database of the Centraal Bureau voor de Statistiek, Voorburg/Heerlen. Accessed February, 2009 from <http://statline.cbs.nl>.
- Chatters, L., & Taylor, R. (2005). Religion and families. In V. Bengtson, A. Acock, K. Allen, P. Dilworth-Anderson, & D. Klein (Eds.), *Sourcebook of family theory and research* (pp. 517–541). Thousand Oaks: Sage.
- Chatters, L., Taylor, R., Lincoln, K., & Schroepfer, T. (2002). Patterns of informal support from family and church members among African Americans. *Journal of Black Studies*, 33(1), 66–85.
- Corman, D. (2000). *Family policies, working life and the third child in two low-fertility populations: A comparative study of contemporary France and Sweden*. Paper presented at the FFS Flagship Conference "Partnership and fertility—a revolution?", Brussels/Belgium, 29–31 May.
- Crockett, A., & Voas, D. (2006). Generations of decline: Religious change in 20th-century Britain. *Journal for the Scientific Study of Religion*, 45(4), 567–584.
- Dekker, P., & Ester, P. (1996). Depillarization, deconfessionalization, and de-ideologization: Empirical trends in Dutch society, 1958–1992. *Review of Religious Research*, 37(4), 325–341.

- Diener, E., Suh, E., Lucas, R., & Smith, H. (1999). Subjective well-being: Three decades of progress. *Psychological Bulletin*, *125*(2), 276–302.
- Dykstra, P., Kalmijn, M., Knijn, T., Komter, A., Liefbroer, A., & Mulder, C. (2005). *Codebook of the Netherlands Kinship Panel Study, a multi-actor, multi-method panel study on solidarity in family relationships, Wave 1*. NKPS Working Paper No. 4. The Hague: Netherlands Interdisciplinary Demographic Institute.
- Ellison, Ch., & George, L. (1994). Religious involvement, social ties, and social support in a Southeastern community. *Journal for the Scientific Study of Religion*, *33*(1), 46–61.
- Engelen, T., & Hillebrand, H. (1986). Fertility and nuptiality in the Netherlands, 1850–1960. *Population Studies*, *40*(3), 487–503.
- EUROSTAT (2006). *Population statistics. Detailed tables*. Luxembourg.
- EUROSTAT (2007). *New Cronos database* (accessed in May and June 2007).
- Fawcett, J. (1983). Perceptions of the value of children: Satisfaction and costs. In R. Bulatao & R. Lee (Eds.), *Determinants of fertility in developing countries: A summary of knowledge, Vol. 1* (pp. 429–458). New York: Academic Press.
- Festy, P. (1979). *La fécondité des pays occidentaux de 1870 à 1970*. Travaux et Documents No. 85 Paris: INED–PUF.
- Fliegenschnee, K. (2006). *There are simply always many good reasons against having a child! Fears and worries about motherhood among childless, highly educated Austrian women*. Paper presented at the 33rd congress of the German Sociological Association, Kassel/Germany, 9–13 October.
- Frejka, T., & Westoff, Ch. (2008). Religion, religiousness and fertility in the US and in Europe. *European Journal of Population*, *24*, 5–31.
- Glass, J., Bengtson, V., & Dunham, C. C. (1986). Attitude similarity in three-generation families: Socialization, status inheritance, or reciprocal influence? *American Sociological Review*, *51*(5), 685–698.
- Grusec, J., Goodnow, J., & Kuczynski, L. (2000). New directions in analyses of parenting contributions to children's acquisition of values. *Child Development*, *71*(1), 205–211.
- Hadaway, K., Marler, P., & Chaves, M. (1993). What the polls don't show: A closer look at U.S. church attendance. *American Sociological Review*, *58*(6), 741–752.
- Heckman, J., & Walker, J. (1990). The third birth in Sweden. *Journal of Population Economics*, *3*, 235–275.
- Heineck, G. (2006). The relationship between religion and fertility: Evidence for Austria. *PER Working Paper* 06-01.
- Hoem, J., & Hoem, B. (1989). The impact of women's employment on second and third births in modern Sweden. *Population Studies*, *43*, 47–67.
- Hoem, J., Prskawetz, A., & Neyer, G. (2001). Autonomy or conservative adjustment? The effect of public policies and educational attainment on third births in Austria, 1975–96. *Population Studies*, *55*, 249–261.
- Janssen, S., & Hauser, R. (1981). Religion, socialization, and fertility. *Demography*, *18*(4), 511–528.
- Kalmijn, M., Liefbroer, A., van Poppel, F., & van Solinge, H. (2006). The family factor in Jewish-Gentile intermarriage: A sibling analysis of the Netherlands. *Social Forces*, *84*(3), 1347–1358.
- KASKI (2007). *Katholiek Sociaal-Kerkelijk Instituut*, data obtained on request.
- Kelley, J., & de Graaf, N. D. (1997). National context, parental socialization, and religious belief: Results from 15 nations. *American Sociological Review*, *62*, 639–659.
- Kohler, H.-P., Billari, F., & Ortega, J. A. (2002). The emergence of lowest-low fertility in Europe during the 1990s. *Population and Development Review*, *28*(4), 641–680.
- Krause, N., Ellison, Ch., Shaw, B., Marcum, J., & Boardman, J. (2001). Church based social support and religious coping. *Journal for the Scientific Study of Religion*, *40*(4), 637–656.
- Kravdal, Ø. (2001). The high fertility of college educated women in Norway: An artefact of the separate modelling of each parity transition. *Demographic Research*, *5*(6), 187–216.
- Kreyenfeld, M. (2002). Time-squeeze, partner effect of self-selection? An investigation into the positive effect of women's education on second birth risks in West Germany. *Demographic Research*, *7*(2), 15–48.
- Lechner, F. (1996). Secularization in the Netherlands? *Journal for the Scientific Study of Religion*, *35*(3), 252–264.
- Lehrer, E. (1996a). Religion as a determinant of marital fertility. *Journal of Population Economics*, *9*, 173–196.
- Lehrer, E. (1996b). The role of husband's religion on the economic and demographic behavior of families. *Journal for the Scientific Study of Religion*, *35*(2), 145–155.

- Lehrer, E. (2004). The role of religion in union formation: An economic perspective. *Population Research and Policy Review*, 23, 161–185.
- Lesthaeghe, R. (1995). The second demographic transition in Western countries: An interpretation. In K. O. Mason & A.-M. Jensen (Eds.), *Gender and family change in industrialized countries* (pp. 17–62). Oxford: Clarendon Press.
- Lesthaeghe, R., & Surkyn, J. (1988). Cultural dynamics and economic theories of fertility change. *Population and Development Review*, 14(1), 1–45.
- Lillard, L., & Panis, C. (2003). *aML Multilevel multiprocess statistical software, version 2.0*. Los Angeles, CA: EconWare.
- Marler, P. L., & Hadaway, K. (1999). Testing the attendance gap in a conservative church. *Sociology of Religion*, 60(2), 175–186.
- McQuillan, K. (2004). When does religion influence fertility? *Population and Development Review*, 30(1), 25–56.
- Mills, M., & Blossfeld, H.-P. (2005). Globalization, uncertainty and early life course. A theoretical framework. In H.-P. Blossfeld, E. Klijzing, M. Mills, & K. Kurz (Eds.), *Globalization, uncertainty and youth in society*. London and New York: Routledge.
- Moen, P., Erickson, M. A., & Dempster-McClain, D. (1997). Their mother's daughters? The intergenerational transmission of gender attitudes in a world of changing roles. *Journal of Marriage and the Family*, 59, 281–293.
- Murphy, M. (1992). The progression to the third birth in Sweden. In J. Trussel, R. Hankinson, & J. Tilton (Eds.), *Demographic applications of event history analysis* (pp. 141–156). Oxford: Clarendon Press.
- Need, A., & de Graaf, N. D. (1996). "Losing my religion": A dynamic analysis of leaving the church in the Netherlands. *European Sociological Review*, 12(1), 87–99.
- Neuman, S. (2007). Is fertility indeed related to religiosity? A note on: 'Marital fertility and religion in Spain, 1985 and 1999', *Population Studies* 60(2): 205–221 by Alicia Adsera. *Population Studies*, 61(2), 219–224.
- Ní Bhrolcháin, M. (1993). Recent fertility differentials in Britain. In M. Ní Bhrolcháin (Ed.), *New perspectives on fertility in Britain. Studies on medical and population subjects* (pp. 95–109). London: HMSO.
- Pargament, K., Koenig, H., & Perez, L. (2000). The many methods of religious coping: Development and initial validation of the RCOPE. *Journal of Clinical Psychology*, 56(4), 519–543.
- Philipov, D., & Berghammer, C. (2007). Religion and fertility ideals, intentions and behaviour: A comparative study of European countries. *Vienna Yearbook of Population Research*, 2007, 271–305.
- Philipov, D., Spéder, Z., & Billari, F. (2006). Soon, later or ever? The impact of anomie and social capital on fertility intentions in Bulgaria (2002) and Hungary (2001). *Population Studies*, 60(3), 289–308.
- Pikálková, S. (2003). A third child in the family: Plans and reality among women with various levels of education. *Czech Sociological Review*, 39(6), 865–884.
- Prskawetz, A., & Zagaglia, B. (2005). Second births in Austria. *Vienna Yearbook of Population Research*, 2005, 143–170.
- Régnier-Loilier, A., & Prioux, F. (2008). La pratique religieuse influence-t-elle les comportements familiaux? *Population et sociétés*, 447.
- Schoen, R., Kim, Y., Nathanson, C., Fields, J., & Astone, N. M. (1997). Why do Americans want children? *Population and Development Review*, 23(2), 333–358.
- Somers, A., & van Poppel, F. (2003). Catholic priests and the fertility transition among Dutch Catholics, 1935–1970. *Annales de démographie historique*, 2, 57–88.
- Statistics Netherlands. (2007). *Statistical Yearbook of the Netherlands 2007*. Voorburg/Heerlen.
- Taylor, R. J., & Chatters, L. (1988). Church members as a source of informal social support. *Review of Religious Research*, 30(2), 193–203.
- Te Grotenhuis, M., & Scheepers, P. (2001). Churches in Dutch: Causes of religious disaffiliation in the Netherlands, 1937–1995. *Journal for the Scientific Study of Religion*, 40(4), 591–606.
- Tilley, J. (2003). Secularization and aging in Britain: Does family formation cause greater religiosity? *Journal for the Scientific Study of Religion*, 42(2), 269–278.
- Van Heek, F. (1956). Roman-Catholicism and fertility in the Netherlands: Demographic aspects of minority-status. *Population Studies*, 10(2), 125–138.
- Van Poppel, F. (1985). Late fertility decline in the Netherlands: The influence of religious denomination, socio-economic group and region. *European Journal of Population*, 1(4), 347–373.
- Ventura, J., & Boss, P. (1983). The family coping inventory applied to parents with new babies. *Journal of Marriage and the Family*, 45(4), 867–875.

- Voas, D., & Crockett, A. (2005). Religion in Britain: Neither believing nor belonging. *Sociology*, 39(1), 11–28.
- Wright, R., Ermisch, J., Hinde, A., & Joshi, H. (1987). *The third birth in Great Britain*. Nordisk statistisk sekretariat. Tekniske rapporter 46.
- Yavuz, S. (2006). Completing the fertility transition: Third birth developments by language groups in Turkey. *Demographic Research*, 15(15), 435–460.