

# 'Losing my religion'<sup>1</sup>: a dynamic analysis of leaving the church in the Netherlands

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In this article, we examine the influence of individual attributes (education, parental education, religious homogamy of parents, religious homogamy of respondent and spouse, frequency of attending religious services, and denomination) and contextual characteristics (cohort and period effects of secularization) on the risk of leaving a faith, using life-event data from the Dutch Family Survey 1992–1993. This approach allows a stronger test of the direction of causality, and enables us to disentangle life-cycle, period, and cohort effects.

The results show that education, parental education, and marrying a non-religious spouse significantly increase the risk of becoming unchurched. With regard to the influence of both one's own and one's parents' education, it appears that up to the level of higher secondary education (HAVO) each higher level of education linearly increases the risk of becoming unchurched. Also, the results show a non-linear life-cycle effect: people are more likely to leave their faith when they are in their late teens. Furthermore, our results suggest a period effect: the current level of secularization increases the risk of becoming unchurched.

## Introduction

Religion has always played a dominant role in Dutch society. Ever since the foundation of the Netherlands, there have been many denominational groups (Bax, 1988; Lane and Ersson, 1987). Almost every inhabitant of the Netherlands belonged to one of these denominational groups, and as a consequence hardly anyone was unchurched. At the beginning of this century, this ideological segmentation became organized, resulting in a system of 'pillars'. This system not only provided separate organizations for Catholics and Protestants, but also for Socialists and Liberals in the fields of education, politics, media, health care, and so on. However, since the 1960s secularization has led to a breakdown of the pillarized structure, and also to a decline in church membership (Felling *et al.*, 1991).

The trend in church membership in the Netherlands differs from that in other European countries. At the beginning of this century the

number of people without a church was negligible, but it slowly grew, despite the flourishing system of pillarization. At the time of the Dutch census of 1930, 14 per cent of the population reported themselves to be unchurched, and by 1947 this had grown to 17 per cent (CBS, 1968). This process of secularization accelerated from 1960 onwards. In 1960, 21 per cent of the Dutch population were not church members, compared with 42 per cent in 1979, and 55 per cent in 1990 (Peters, 1993). Other European countries show far lower percentages of unchurched inhabitants compared with the Netherlands. Even today, of all European countries only France (26 per cent) and Belgium (15 per cent) have a percentage unchurched that is above 10 per cent (Halman *et al.*, 1987).

Because the pillarized structure involved almost every aspect of life, the decline of religion as an influential institution in the Netherlands in the last

three decennia has had many important social consequences (Becker and Vink, 1994a). It would therefore be desirable to gain insight into the factors that influence the chances that an individual will become disaffiliated. This illustrates the importance of studying secularization at the individual level: a similar number of church-members at two points in time does not necessarily imply that no one has left the faith. The number of Catholics in the Netherlands increased from 1947 to 1960, but when we take the relatively high birth-rate among Catholics into account, we can see that a large number of Catholics became disaffiliated (CBS, 1968). Thus, since macro-level indicators give insufficient information about this process at the individual level, it is necessary to study the process of disaffiliation at the individual level.

A number of studies have looked at the attributes of unchurched and church members in the Netherlands (Doom and Bommeljé, 1983; Felling *et al.*, 1986; Schepens, 1991; Becker and Vink 1994a). In this article, we try to go further than these previous studies, first, by testing specific hypotheses on period and cohort effects, and second, by using dynamic data and event-history analysis, enabling a more powerful test of hypotheses from previous studies.

The most recent and comprehensive study on disaffiliation in the Netherlands is Becker and Vink (1994a). Here, differences in the number of disaffiliated people between generations are interpreted as a consequence of a particular cohort context. We argue that these context effects can be made more specific by using variables with a theoretical meaning, instead of just comparing certain cohorts. In this way, we can test the expected causes of differences in disaffiliation rates between generations (*cf.* De Graaf, 1988). The same approach will be used to determine period effects. This approach has two advantages: first, effects have a clearer substantive interpretation and second, cohort, period, and life-cycle effects can be disentangled.

In order to explain differences in leaving church between generations, we will draw upon theoretical explanations of the mechanisms behind the process of disaffiliation. Unfortunately, present theoretical explanations do not address the problem of causal direction. For example, Becker and Vink (1994a) claim that better educated people are to a greater extent unchurched compared with less educated

people. However, it is not convincingly argued that higher education causes disaffiliation<sup>2</sup>. In this article, we try to disentangle the mechanisms that cause people to disaffiliate. Investigating whether the higher educated are to a greater extent unchurched compared with less educated people, does not adequately take into account the dynamics of the process of leaving a church. The higher educated may become unchurched before completing their education. This would mean that a group context effect, rather than e.g. greater enlightenment by virtue of greater knowledge, would be the causal mechanism. Accordingly, it is necessary to obtain information on the whole educational career, and on the timing of leaving the church. By investigating the influence of various individual attributes on the risk of leaving the church using this dynamic approach, we are able to model the order of causation.

This brings us to the main question of this study: which individual and structural characteristics influence the risk of becoming unchurched in the Netherlands? We will test specific hypotheses, derived from previous studies,<sup>3</sup> by using a dynamic approach. Almost all studies on leaving a church ignore the fact that the chance of leaving might not be the same at each age. To be able to establish a causal effect of several life-cycle characteristics, like the presence of a spouse, on the risk of becoming unchurched, it is important to determine that these factors precede the event of becoming unchurched. For example, Schepens investigated the effects of having a spouse, educational level, and job situation on the chance of being unchurched at the time of the interview (Schepens, 1991). However, as Table 1 shows us, on many occasions people leave their faith before they meet their spouse, before they complete their education, and before they find a job.

**Table 1.** Percentage of disaffiliated people living with a spouse who finish their education, start their first job and start living with their present spouse before and after they have left their faith (N=180)

	Highest education completed	Start first job	Start living with present spouse
Before leaving faith	48	59	31
After leaving faith	52	41	69

Source: Family Survey (1993); authors' calculations.

Static approaches are not capable of modelling the causal order and can therefore lead to incorrect conclusions. In this study, we will—in line with Sherkat (1991)—improve upon earlier research by analysing life-event data with an event-history model. We will test hypotheses based on earlier studies, using this more appropriate model. Moreover, we will identify cohort and period effects by giving these effects a theoretical interpretation, and test whether this interpretation is better than simply comparing birth cohorts and time periods.

The structure of this article is as follows. In the following section, we will discuss the theories and research findings on leaving church affiliation. The third section describes the data and the research method used to test our hypotheses. The results of our analyses are presented in the fourth section, followed by a discussion of these results in the final section.

## The theoretical background

A great deal has been written on the causes of secularization in the Netherlands (Faber and Ten Have, 1970; Doorn and Bommeljé, 1983; Felling *et al.*, 1986; Stoffels and Dekker, 1987; Schepens, 1991; Becker and Vink, 1994a; and for the United States on religious switching: Hadaway, 1978; Kluegel, 1980; Greely and Hout, 1988; Sherkat, 1991). Two major groups of factors are generally distinguished to explain why someone will or will not leave church. The first emphasizes the importance of modernization. The second stresses the relevance of integration and socialization into a religious community. We will review both approaches, and derive hypotheses which can be tested in the analyses.

From a modernization point of view, we can anticipate that the level of education would have a positive impact on the risk of becoming unchurched (Inglehart, 1977; Peters, 1993). In advanced industrialized societies, with increasing educational levels, a mechanical world-view becomes more natural. More highly educated people tend to develop more individualistic and liberal norms than less educated people, and, consequently, will have a greater risk of leaving church. Previous research has repeatedly shown that in the Netherlands, people with a higher level of education are more likely to be unchurched than persons with a lower level of edu-

cation (Doorn and Bommeljé, 1983; Felling *et al.*, 1991). Schepens (1991) also shows that for all those who have been raised religiously more highly educated people have a greater chance of having left church during their lives.

We might also expect that parental education will influence the risk of becoming unchurched. More highly educated parents will be less successful in transmitting their religious norms to the next generation (Schepens, 1991), due to lower motivation as a result of their liberal and individualistic attitude. More highly educated parents are also more likely to give their children alternative information. We thus expect people with better educated parents to have a greater risk of leaving church compared with persons with less educated parents.

From an integration or socialization point of view (Durkheim, 1960; *cf.* Ultee *et al.*, 1992), we can expect that people who are strongly integrated into their social group will be more likely to obey the norms of this group. A key indicator of social integration is the religious homogeneity of a person's environment. Whether or not the parents are religiously homogamous—i.e. have the same denomination—should have added weight in determining to what extent the social environment should be regarded as homogeneous. Consequently, we expect that persons with religiously heterogeneous parents have a greater risk of leaving church than individuals with religiously homogeneous parents. Previous research supports this hypothesis. Faber and Ten Have (1970) show the following percentages of unchurched: among offspring of religious homogeneous parents 12 per cent, among offspring of religious heterogeneous parents 30 per cent (both parents religious) and 64 per cent (one parent unchurched).

Whether or not the spouse is religious will also strongly affect the extent of social integration. Based on the same reasoning as above, we hypothesize that having a non-religious spouse will result in a greater risk of leaving a church compared to a situation in which the spouse is non-religious.

Social integration in a religious community is also determined by whether a person attended religious services frequently during childhood. Church attendance as a child also indicates the strength of religious socialization, which will have an independent effect on the risk of becoming unchurched.

Denominations differ in the strictness of their religious tenets. Consequently, they will also differ in their ability to retain members. Becker and Vink (1994a: 112) present measures of the degree of orthodoxy and tolerance for all denominations. Their results showed that Catholics are most tolerant and least orthodox, while the reverse holds for the orthodox Protestants. If we assume that persons who are raised in an orthodox community are more integrated into this community, we can expect that orthodox Protestants will have the lowest risk of becoming unchurched, while Catholics will have the highest risk of leaving their church. Schepens (1991) expected Catholics and liberal Protestants to have a greater risk of leaving their faith compared with orthodox Protestants. His analyses showed that liberal Protestants do indeed have a greater risk of leaving their faith compared with orthodox Protestants but this does not hold for Catholics.

### **The macro context: a cohort and period effect**

An increasing number of people leaving church ultimately leads to a decrease in the number of people being church-members. As a consequence, the church as an institution will become less significant, and this might accelerate the process of secularization. However, in the end we can also assume that this change at the societal level will influence behaviour at the individual level. If one lives in a society in which almost everyone is religious, one is less likely to become unchurched compared with a society where there are only a few religious people. Consequently, the changing social context will ultimately have an impact on the risk of losing one's faith.

Middendorp (1991) showed that major societal changes have occurred since the 1960s. Until 1965, Dutch society can be characterized as being pillarized. Between 1966 and 1975 democratization and individualization started a process of secularization. These distinct periods will have influenced generations differently. People born before 1950 grew up in a different period than people born after 1950, and consequently they will differ in their risk of leaving church. In this article, we distinguish two different context effects. However, we will not just compare certain cohorts, but use variables with a theoretical meaning. A first context effect regards a cohort

interpretation. This interpretation implies that a higher level of unchurched during adolescence increases the risk of leaving church at a later point in time. An alternative interpretation concerns a period effect. Such an interpretation would predict that a higher level of unchurched (at every moment in the life-cycle) will increase the likelihood of leaving church. Thus, a cohort interpretation predicts that a more secularized society during adolescence makes it more likely that one leaves faith. A period effect interpretation predicts that the more secularized one's present context is, the higher the risk is to leave church.

## **Data and method**

To test our hypotheses we made use of the Family Survey of the Dutch Population (Ultee and Ganzeboom, 1993). This survey is a representative cross-section of the adult Dutch population. In this survey, retrospective data on several life-events, including religious and educational careers, as well as demographic characteristics, were collected for 1000 respondents and their spouses, if present.

We restricted our analyses to persons with religious parents only, since persons with unchurched parents are not at risk of leaving a church. Furthermore, from the data we selected respondents who had a valid score on all relevant variables. Because of these selections, 653 respondents remained. Of these 653 persons, 186 left their church.

To test our hypotheses, we made a so-called person-period data-file. This file contains a record for each year of age of each respondent, up to the moment when this person becomes unchurched. If this person does not become unchurched, there is a record for each year until the moment of interview. Organizing the data in such a way results in 17 934 records. Each record contains information on whether this person has left their faith or not, what the percentage of unchurched people was in that specific year, whether this person has a spouse in that year, and if so, whether this spouse is religious, what the educational level at that moment was, or, if the respondent is not enrolled in education, what the highest completed educational level is. Each record contains information on all other, time-invariant variables as well. In this case, each

respondent has the same value for all of these variables in each record.

In Table 1 we showed that if one wants to model the causation of certain attributes, one has to consider the exact time when people leave a church. The age at leaving a church was measured by the following question: 'At what age did you change denomination? Or since when do you consider yourself as not belonging to a denomination?' Only people who were unchurched at the time of interview, and who gave an answer to this question, are considered to have left a church.

The educational level was measured on an ordinal scale ranging from 1 (unfinished primary school) to 10 (completed dissertation), for every year in a respondent's life.<sup>4</sup> Hence, education is treated as a covariate that changes over time, a so-called 'time varying covariate'. Consequently, it is not the completed educational level that we coded for every year in a respondent's life, but rather the educational level she or he is enrolled in at a particular point in time. Parental education is measured by the highest level completed by either of the parents.

We also included two dichotomous variables indicating whether someone had religiously homogeneous parents at age 15, and whether both parents were church-members. Two dummy variables were used to indicate whether a respondent had a spouse, and whether this spouse was religious. People who did not have a spouse therefore form reference category. These dummy variables are also time-varying covariates. Until the age at which someone starts to live with a spouse, s/he is given a 1 on the dichotomous variable 'no spouse'. After this age, this variable is given the score 0, and if the spouse belongs to a denomination, the dichotomous variable 'spouse denomination' is given a 1. The information for the spouse on church membership and age of leaving a church is obtained directly from the spouse.

We also included a dichotomous variable indicating how frequently one attended church during childhood: once a week or more versus less than once a month. Religious denomination was divided into four categories: Catholic, liberal Protestant, orthodox Protestant, and other. The group 'other denominations' was used as a reference category.

Our macro-indicators for the level of secularization were constructed as follows. The measure for

the level of secularization is indicated by the percentage unchurched, and constructed by using census data for the percentages unchurched for 1930, 1947, and 1960, and interpolating values for the percentage unchurched for the years between 1930 and 1960. For the years between 1962 and 1992 weekly surveys are available.<sup>5</sup> In this period, the percentages unchurched are obtained by asking the following question: 'What Christian church are you affiliated to?' The possible answers are: (1) Catholic; (2) liberal Protestant; (3) orthodox Protestant; (4) other denominations; (5) no denomination.

In the Netherlands there are substantial differences in the percentage of unchurched between provinces. For instance, the southern provinces had less than 1 per cent of unchurched inhabitants in the 1960s, while the northern provinces already had more than 60 per cent unchurched in that period. Hence, we have weighted the national figures to achieve a more accurate measure of the percentage of unchurched people in the region where the respondent lived. Thus, on the basis of their ratios at the census dates, the percentage unchurched has been weighted to represent differences in the number of unchurched inhabitants between provinces.

To represent a cohort effect of the level of secularization, each respondent was given a score on the variable secularization, which indicates the percentage of unchurched inhabitants when this person was 15 years old, for the province where she or he was born.<sup>6</sup> In addition, for our period-effect interpretation, each respondent was given a score on the variable secularization on each record in the person-period data file.

On the basis of earlier studies, we hypothesized that several attributes could explain whether a person will leave her or his faith. To test these hypotheses, we made use of event-history analysis. Event-history analysis can be used to study transitions in individual life-events such as marriages, divorces, career processes such as unemployment or employment, or leaving a church. One major advantage of event-history models, is that they can deal with censored observations (Yamaguchi, 1991: 3). This happens, for instance, if a person has not left her or his faith at the survey date. Because we do not know if and when this person will leave their church, the value for the age of leaving church is missing, although

we do have information about the duration of the risk period up to the survey date. Event-history analysis can deal adequately with these censored observations, given that the timing of the interview is independent of the risk of leaving the church. When cross-sectional surveys are used, this condition is fulfilled (Yamaguchi, 1991).

Another relevant advantage of this dynamic approach is that we can model the exact causation of the process of leaving the church more convincingly. Furthermore, the identification problem of cohort, period, and life-cycle effects can be solved more adequately (cf. Blossfeld, 1986).

Within the class of event-history models, we can distinguish several types of models. One major distinction is that of discrete-time and continuous-time models. When the time unit is relatively crudely measured, as in our case on the basis of years,

discrete-time models can be used. Given that we know only the year of leaving the church, we use a discrete-time model.

In an event-history analysis, hazard rates are modelled. A hazard rate,  $b(t)$ , expresses the conditional probability of leaving church at time  $t$ , given that one has not left the faith before time  $t$ . The hazard-rate function is given as:

$$b(t) = P(T = t_i | T \geq t_i) \quad (1)$$

In the discrete-time logit model we modelled the odds for conditional probabilities. We can express this model as follows:

$$\ln\left(\frac{b(t)}{1-b(t)}\right) = a_i + \sum_k b_k X_{ik} \quad (2)$$

In this formula,  $a_i$  is the baseline hazard function for an individual with covariate vector  $\mathbf{X}=0$ . The

**Table 2.** Percentage of people in different groups that leave church (N=695)

Characteristic	% leaving church	Total
<b>Parental education</b>		
LO- (less than primary education)	15	34
LO (primary education)	24	244
LBO (lower secondary vocational training)	25	147
MAVO (middle-level secondary education)	27	62
MBO (middle-level vocational training)	34	56
HAVO (higher-level secondary education)	69	13
VWO (secondary scientific training)	19	26
HBO (higher-level vocational training)	56	50
WO (university)	36	14
WO+ (Ph.D-level)	29	7
<b>Parental religious homogamy</b>		
not homogamous: one parent not a church-member	46	26
not homogamous: both parents church-members	33	43
homogamous	27	584
<b>Frequency of attending religious services</b>		
less than once a week	37	199
once a week or more	25	454
<b>Denomination</b>		
Catholic	23	424
liberal Protestant	37	146
orthodox Protestant	43	51
Other	34	32
<b>Average</b>	<b>28</b>	<b>653</b>

Sources: Family Survey (1993); authors' calculations.

parameters  $b_k$  indicate the effect of covariate  $X_{kj}$  on the odds of a transition from a state of church affiliation to a state of being unchurched. Equation (2) can be estimated using logistic regression on a person-period file.

## Results

Before presenting the results of our survival analysis, we first present some bivariate measures of secularization on the basis of our regular data-file, in which the cases are represented by the respondents. In Table 2 we present the relative distributions of parental education, parental religious homogamy, frequency of attending religious services, and denomination for those respondents who had become unchurched in the period up to the time of the survey.<sup>7</sup>

A brief inspection of Table 2 shows that the different groups do indeed differ in their risk of leaving church. On average, 28 per cent of the respondents leave their faith. However, when the education level of the parents is lowest, people tend to stick to their religion, with about 20 per cent leaving their faith. The percentage of persons who become disaffiliated is much higher among offspring with more highly educated parents.

Having religiously homogeneous parents also clearly influences the risk of leaving church. Of all respondents with religiously homogeneous parents, 27 per cent leave their faith, whereas 46 per cent of the offspring of religiously heterogeneous parents leave their church if one parent is non-churched and 33 per cent leave if both parents are religious, but of different faiths.

Table 2 also shows that attending religious services frequently during childhood also reduces the risk of leaving church. Whereas people who attended these services regularly are less inclined to become unchurched, those who did not attend regularly are more inclined to leave their faith. Different denominations differ in their ability to retain their members. The Catholic Church is the most successful in this respect, and the orthodox Protestant Church is the least successful.

Table 2 has shown us that different groups do differ in their risk of leaving a church. However, so far we have not considered that people tend to leave their faith when they are relatively young. In Table 3

Table 3. Percentage that leave church by age group ( $N=186$ )

Age	% leaving church
<12	2.7
13-14	3.2
15-16	12.4
17-18	18.3
19-20	21.5
21-22	8.1
23-24	8.6
25-26	9.7
27-28	3.8
29-30	3.2
31-34	1.6
35-39	2.7
40-49	2.2
over 50	2.2

Source: Family Survey (1993); authors' calculations.

we cross-classify the chance of being disaffiliated by age. This distribution clearly shows that people tend to leave their faith when they are in their late teens and early twenties. As they get older, it becomes increasingly unlikely that they will leave their church.<sup>8</sup>

Table 4 presents an event-history analysis of the effects of several factors on the probability of leaving a church. The model we present does not include interaction effects between age on the one hand and the socialization effects on the other, because none of these interaction effects proved to be significant. The first column contains the parameter estimates, and column two contains the exponent of these parameter estimates. These exponents can be interpreted in terms of odds. The significance of the effects are presented in the third column. The  $\chi^2$  of 243 with 25 degrees of freedom for a comparison of our model with a model with only a constant shows that, generally speaking, the effects are significant.

In the model presented here, education and parental education have a slightly different coding from that used in Table 3. Preliminary analyses showed that the effects of both own and parental education

Table 4. *Survival analysis risk of leaving church (N=17 934; model  $\chi^2=243$ ; 25 degrees of freedom)*

Characteristic	Effect on leaving church (B)	Exp (B)	Significance
Education	0.14	1.15	0.03
Parental education	0.11	1.12	0.04
Parental religious homogamy			
not homogamous: one parent not a church-member (ref)	—	—	—
not homogamous: both parents church-members	-0.10	0.90	0.81
homogamous	-0.11	0.89	0.73
Church membership spouse			
no spouse (ref)	—	—	—
spouse church-member	-0.17	0.84	0.52
spouse not church-member	1.45	4.25	0.00
Frequency of attending religious services			
less than once a week (ref)	—	—	—
once a week or more	-0.33	0.72	0.06
Denomination			
Catholic	-0.08	0.92	0.80
liberal Protestant	0.14	1.16	0.67
orthodox Protestant	0.51	1.66	0.19
other (ref)	—	—	—
Cohort-effect			
secularization	0.01	1.01	0.48
Period-effect			
secularization	0.01	1.01	0.01
Age			
< 12	-2.34	0.10	0.00
13-14	-1.98	0.14	0.00
15-16	-0.63	0.53	0.02
17-18	-0.24	0.79	0.32
19-20 (ref)	—	—	—
21-22	-0.98	0.38	0.00
23-24	-0.90	0.41	0.00
25-26	-0.73	0.48	0.02
27-28	-1.63	0.20	0.00
29-30	-1.74	0.18	0.00
31-34	-3.01	0.05	0.00
35-39	-2.54	0.08	0.00
40-49	-2.91	0.05	0.00
over 50	-2.11	0.12	0.00

Source: Family Survey (1993); author's calculations.

were non-linear. A higher educational level than higher secondary education (HAVO) did not further increase the risk of leaving church. Therefore, all educational levels of HAVO and above were given the same score.

A first significant effect (i.e.  $p < 0.05$ ) in Table 4, is that of one's own education. The higher one's education (up to the higher secondary level), the greater the risk of leaving a church. This result is in line with the earlier results by Schepens (1991).



Parental education also has a significant independent impact on the risk of leaving church.

Having religiously homogeneous parents also slightly increases the risk of becoming unchurched. However, given the large standard errors, these effects are not significant. With respect to the church membership of the spouse, we assumed that a respondent cohabitating with someone belonging to a denomination would have a lower chance of losing their faith compared to someone living with a non-churched spouse. The parameter estimates in Table 4 suggest that this hypothesis is partially supported. Someone with a religious spouse has a lower risk of leaving their church compared with single persons, but the difference is not significant. However, persons with a non-religious spouse do have a significantly greater chance of becoming unchurched compared with people without a spouse. Table 4 also shows us that persons who attended religious services frequently during childhood do not have a significantly lower risk of becoming unchurched compared with persons who did not attend frequently during childhood.

With respect to variations in church leaving between denominations, we can see in Table 4 that although Catholics have a marginally lower risk of becoming unchurched compared with the category

'other denominations', and liberal Protestants and orthodox Protestants have a somewhat greater risk of leaving church compared with the other denominations, the parameter estimates do not significantly differ from each other. We will present a test of the significance of the variation in church leaving between denominations below.

If we examine the cohort effects in Table 4, we see that the effect of being born into a more secular society during childhood is not significant. The period effect, however, shows that living in a society that is more secular does indeed influence the likelihood of becoming unchurched.<sup>9</sup>

We have also checked whether using substantive variables to indicate cohorts and periods provides a better fit than just using birth cohorts and years. To do this we estimated the same model, but replaced the cohort effect of secularization with a variable representing the year of birth, and replaced the period effect of secularization with the year itself. The  $\chi^2$  of this model is 238, with 25 degrees of freedom. Since our first model has a  $\chi^2$  of 245 with the same number of degrees of freedom, we can conclude that using substantive variables explains significantly more about the risk of leaving church.

In conclusion, we examine the effects of age-groups.<sup>10</sup> The parameter estimates for the different

Table 5. *Significance survival analysis risk of leaving church (N=17 934)*

Characteristic	Chi <sup>2</sup>	Degrees of freedom	Chi <sup>2</sup> /degree of freedom
Education*	4.68	1	4.68
Parental education*	4.43	1	4.43
Parental religious homogeneity	0.12	2	0.06
Church membership of spouse**	21.9	2	10.9
Frequency of attending religious services	3.36	1	3.36
Denomination	5.73	3	1.91
Cohort-effect			
secularization	0.50	1	0.50
Period-effect			
secularization**	7.46	1	7.46
Age**	109.7	13	8.44

\* $p < 0.05$ .

\*\* $p < 0.01$ .

Source: Family Survey (1993); authors' calculations.

age-groups stand for life-cycle effects. All parameters are negative, indicating that the reference category age 19–20 has the greatest risk of leaving church. Hence, leaving church is a phenomenon that typically happens during early adulthood.

As noted above, a  $\chi^2$  test of the likelihood of our model versus a model with only an intercept was significant. However, this does not necessarily mean that all model terms are also significant. We checked whether the fit of the model significantly worsens when we exclude one, or a group of variables from the equation. Table 5 shows the  $\chi^2$  change resulting from dropping each term from our model.

Inspection of Table 5 shows that there are five variables that meet the significance criterion of 0.05. Age, education, parental education, church membership of spouse, and the period effect of secularization all significantly affect the risk of becoming unchurched, although the effects of education and parental education are not strong. Contrary to common belief, parental religious homogamy does not affect the risk of becoming unchurched. Differences between denominations in retaining members are also non-significant.

## Discussion

In this article, we treated the process of leaving church as a dynamic process. By using a discrete event-history model to estimate the conditional risk of leaving church, we are able to ascertain the effects of individual attributes (education, parental education, parental religious homogamy, religious homogamy, frequency of attending religious services in childhood, and denomination) and contextual characteristics (period and cohort effects). Through the use of substantive variables for the effects of cohort and period, we are able to estimate cohort, period, and life-cycle effects. This method has the advantage that cohort and period effects have a direct theoretical interpretation.

The results regarding the individual attributes are the following. The education one is enrolled in has a significant impact, with higher levels of education leading to higher risks of leaving a church. Moreover, we found that the effect of education is non-linear,<sup>11</sup> in that a higher educational level than HAVO (higher level secondary education) does not

increase the risk of leaving a church. We assumed that the mechanism behind the impact of education was that the higher the level of education the more people tend to develop individualistic and liberal norms, and as a consequence the greater their likelihood of leaving a church. If this is correct, our finding would mean that more education than a HAVO degree does not increase one's liberal and individualistic norms. If this is not the case, the assumed mechanism has to be adjusted. If one likes to stick to the assumed effect of liberal and individualistic norms, it could be that a certain threshold level of these norms is sufficient. Whatever explanation one prefers, an interesting consequence of the non-linear effect of education is that, if the educational expansion only concerns a relative increase in the number of people with a university degree, but not an increase of the relative number of people who have more than a HAVO-degree, this will not affect the process of disaffiliation.

Our findings showed that parental education has an independent effect on church leaving, as well as church membership of the spouse. These results are in line with Schepens (1991). However, his results also show that living with a spouse who is a church-member, does not decrease the risk of leaving a church compared with persons without a spouse. Furthermore, persons who have frequently attended religious services in childhood have no greater risk of leaving church compared with persons who did regularly attend these meetings.

Becker and Vink (1994a) argue that youngsters are more unchurched compared to the elderly. Our analyses show that people tend to leave church when they are 15–20 years of age, regardless of the period they live in. A question that this study leaves unanswered is why people have the greatest risk of leaving their church at this stage of their life-cycle. This implies that there are life-cycle effects going on for which we do not have measures. Interestingly, the highest probability of leaving church occurs when one is 19 or 20 years old (see Table 4). The most obvious explanation is that at this age one tends to leave the parental home in the Netherlands. Leaving home implies that not only the influence of one's parents decreases but also that, besides one's spouse, other people appear in one's social network.

We have also tested whether contextual effects affect the risk of leaving church. For this purpose,

we have formulated hypotheses with respect of cohort and period effects. To improve upon earlier studies (Peters, 1993; Becker and Vink, 1994a), we have not only compared different birth-cohorts, but also formulated specific hypotheses (cf. Blossfeld, 1986; De Graaf, 1988; De Graaf and Luijkx, 1992). Our specific hypothesis for a cohort effect suggests that the more secular the environment in which one is socialized, the greater the risk of leaving a church will be. This hypothesis is not confirmed.

Finally, we tested whether a period effect was present. In this case, we investigated the level of secularization in the current context. The results suggest that there is indeed a period effect of secularization. At every point, the higher the level of secularization, the greater the risk of leaving church will be. As a consequence, this will reinforce the chance of becoming disaffiliated.

In this article, we have made predictions about leaving a church on the basis of modernization and integration (socialization) theories. The results clearly show that we cannot prefer one theory over the other. Both theoretical perspectives lead to predictions that have some merit. In this respect, one important finding related to the integration theory was that church membership of the spouse is an important predictor of the risk of leaving a church. This result once again stresses the importance of using a dynamic approach, since it is crucial to know, first, whether there was a spouse prior to leaving a church, and second, whether this spouse was a church member at that moment.

We have investigated which factors cause individuals to leave their church in the Netherlands. The next question might be whether our findings for the Netherlands apply to other European countries as well. In other European countries there are far lower percentages of unchurched compared with the Netherlands. An explanation for this finding has been given by Becker and Vink (1994a: 32). They claim that the unique system of pillarization in Netherlands is the cause of the high level of secularization. Since the historical background plays such a dominant role with respect to religion, it might be difficult to compare disaffiliation processes in different countries. Furthermore, to our knowledge there are no similar studies using a dynamic perspective in other European countries. This makes such a comparison even harder.

For the Dutch context, however, our results have important implications. The continuing process of modernization and its accompanying higher levels of education, and the increasing level of religious heterogamy (Hendrickx, 1994) make the process of secularization irreversible.

## Notes

1. 'Losing my Religion' is the title of a song from the R.E.M. CD *Out of Time* (1991).
2. In fact, the authors do not even claim to have causal assumptions in their analysis (cf. Becker and Vink, 1994b). This is rather awkward, considering that their book contains a full chapter on the explanation of secularization.
3. Unlike the practice in the American literature (cf. Sherkat, 1991; Sullins, 1993), we do not go into the discussion on religious switching. The reason for this is that changing denominations is extremely rare in the Netherlands (Dekker, 1987: 173; Schepens, 1991).
4. The exact codings are in English and Dutch: (1) did not finish primary education: LO -; (2) primary education: LO; (3) lower secondary vocational training: LBO; (4) middle-level secondary education: MAVO; (5) middle-level vocational training: MBO; (6) higher-level secondary education (HAVO); (7) secondary scientific training: VWO; (8) Higher-level vocational training: HBO; (9) University: WO; (10) Ph.D.-level: WO+.
5. These data are documented in: Eisinga and Felling, 1992 (archive number P1089). The weekly surveys have been aggregated to obtain yearly measures. To obtain the percentage unchurched in 1961, 1963, and 1968, we performed a regression analysis on the basis of the data in the period between 1952 and 1972. We would like to thank Rob Eisinga, who was so kind as to provide us with the figures from the weekly NIPO-surveys. The survey asks which Christian church one is affiliated to. Therefore, people belonging to a non-Christian faith are excluded, which might affect the results. However, as there have traditionally been very few people with a non-Christian denomination, the results will only be slightly different.
6. We would have preferred to have data on the provinces where the respondents have lived throughout most of their lives, but these were not available in the survey.
7. In Table 2 we cannot include time-varying covariates (like respondent's education and the denomination of the partner) as well as continuous variables (such as level of secularization).

8. The fact that about 58 per cent of the population leaves church before the age of 21 illustrates elegantly why it is impossible, even with many cross-sectional data-sets, to model period effects without a dynamic design. Our result implies that, if one has many cross-sectional representative data-sets for the adult population over a long period, and if one assumes that each time of interview is defined as a period-effect, most of the respondents are no longer at risk.
9. In an earlier analysis (Need and De Graaf, 1994) as well as testing for a contextual effect of secularization we also tested for a contextual effect of modernization. In that analysis, however, we did not have a measure of secularization for each province, which is a more accurate measure and gives more variation within years. The inclusion of all these indicators, as well as those for cohort effects caused problems of multicollinearity. Separate analyses showed that the effect of secularization is stronger than the effect of modernization.
10. We have added age groups in the analysis, because the groups do not differ much in their risk of leaving their faith, and adding them results in a gain on degrees of freedom.
11. Interestingly, if we analyse our data in a non-dynamic way as well, we encounter a linear relationship between education and the chance of leaving a church.

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