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# Why God Has Left the Netherlands: Explanations for the Decline of Institutional Christianity in the Netherlands Between 1966 and 2015

JORIS KREGTING   
Faculty of Philosophy, Theology and Religious  
Studies  
Radboud Universiteit Nijmegen

PEER SCHEEPERS  
Department of Sociology  
Radboud Universiteit Nijmegen

PAUL VERMEER  
Faculty of Philosophy, Theology and Religious  
Studies  
Radboud University Nijmegen

CHRIS HERMANS  
Faculty of Philosophy, Theology and Religious  
Studies  
Radboud University Nijmegen

*Why has the Netherlands witnessed such a strong process of secularization? This article examines this process very extensively. Based on modernization theory, it follows several social cultural developments in Dutch society over the last 50 years and distinguishes between effects on the individual level as well as on the level of society. We are able to do so because of rich data availability, derived from micro-level longitudinal surveys (God in the Netherlands, Social and Cultural Developments in the Netherlands) enriched with macro-level statistics (Statistics Netherlands). With this integrated approach, we provide explanatory insights into the transition of the Netherlands from a predominant Christian nation to a predominant secular nation. Our analysis clearly shows that macro-level educational expansion has affected this process of secularization in the Netherlands, supplemented with the increase in social security, as a so-called cohort effect. Moreover, the long-term effect of Christian socialization is waning; Dutch people who were raised in a religious way increasingly lapse later in their life.*

**Keywords:** secularization, modernization theory, the Netherlands.

## INTRODUCTION

At Easter 2016, a Dutch study called “God in the Netherlands” (GIN) (Bernts and Berghuijs 2016) was presented—with a gloomy message from a Christian perspective: over the last 50 years, the Netherlands has undergone a process of massive secularization. Church membership dropped from 67 percent in 1966 to 25 percent in 2015; in the same period, the number of Dutch people who attend church on a regular basis dropped from 50 percent to 12 percent; and the number of Dutch people who believe in a personal God or a higher power dropped from 78 percent to 32 percent. The authors concluded that Christianity in the Netherlands is falling by the wayside and only small minority churches will survive. Although this process is not new, the extent of this Christian decline nevertheless amazed the Dutch media (e.g., Ruiter and De Fijter 2016; Van Walsum 2016).

In this article, we will use the Dutch case of secularization to test aspects of modernization theory, following up on previous research (e.g., Aarts et al. 2008; Norris and Inglehart 2004; Voas 2009). We propose that our study tests the power of modernization theory more extensively because it simultaneously pays attention to three aspects: a wide range of societal developments

*Correspondence should be addressed to Joris Kregting, Faculty of Philosophy, Theology and Religious Studies, Radboud University Nijmegen, Box 9103, 6500 HD Nijmegen, The Netherlands. E-mail: j.kregting@kaski.ru.nl*

that can explain secularization, different types of effects of these developments that affect secularization, and high-quality data for a very long-term research period. The first aspect is about the complexity of modernization theory. This theory contains a variety of social, cultural, and economic determinants, such as individualization and the increase in financial and social security. Because these developments are not independent, it is important to treat them simultaneously in a rather comprehensive explanatory model for secularization. Second, many studies treat aspects of modernization only as individual effects; there are individual characteristics, for example, the educational level, that influence religiosity at a certain moment. There are, however, other important effects on the macro level. As Mannheim (1963) and Inglehart (1990) have proposed, the context of a society plays a crucial role in the values and beliefs of individuals, also concerning religiosity. This context affects religious values at a certain moment in all people's lives as a period effect. But this context also affects people in their formative years: being raised under certain social circumstances marks people's religious values for the rest of their life as a cohort effect. Our third research aspect involves the *process* of secularization. Individual, period, and cohort effects can change over time. In explaining secularization, it is therefore important to study these changes over longer periods of time; short periods or "snapshots" of data will not provide full insights. Unfortunately, there are hardly any studies that address the process of secularization over such a really long period. There are a few exceptions, like studies from Dobbelaere, Billiet, and Voyé (2011) and Reitsma et al. (2012). These two studies, based mainly on data from the European Values Study, start in 1981. However, they miss the crucial decades of the 1960s and 1970s, when many Western European countries recovered from World War II and began to change rapidly. The process of secularization was already evident in the Netherlands in these two decades. For example, in declarations of birth between 1960 and 1979, the percentage of newborns who were *not* registered as religiously affiliated doubled, from 17 percent to 34 percent (Van Zoelen and Witteman 1981). These early signs of declining church membership were also demonstrated by Te Grotenhuis and Scheepers (2001).

Many Western countries display signs of secularization. According to Bruce: "In all the states of Western Europe and in Canada, Australia and New Zealand, once decline has begun, it has proceeded unchecked" (2011:23). Even in the United States—long an example of a very modernized country that has resisted secularization—there was recently a drop in the number of religious people (Smith 2015). Amidst these Western countries, the Netherlands is frequently presented at the forefront of the process of secularization (Halman 2015; Reitsma et al. 2013). The study of the Dutch case of secularization can consequently serve a greater purpose. It is interesting to fathom the Dutch case of secularization in order to investigate the applicability of it to similar countries, but also to countries that seem to be in an earlier stage of secularization, such as Ireland, the Mediterranean countries, and the United States. The focus on the Netherlands has an additional advantage: it has very high-quality longitudinal data available, concerning surveys in combination with statistics about the societal context.

Let us resume the key issues of our research approach and formulate the central research question. We will regard the process of secularization in the Netherlands for almost 50 years, from 1966 to 2015. We will try to explain Dutch secularization driven by modernization very thoroughly by paying attention to various cultural and social developments, to effects on the micro and macro level, and to a long research period. We focus on institutional Christianity because in the Netherlands just after World War II, this was the norm. Since then, from being a country with a majority population of church-attending Christians, the Netherlands has changed dramatically, making it an exceptionally strong candidate for testing modernization theory. In this article, we set out the following research question: to what extent can secularization in the Netherlands between 1966 and 2015, in terms of the decline of institutional Christianity, be explained from a modernization theory perspective, unfolded in terms of period and cohort effects, next to changing individual effects?

### THEORY AND HYPOTHESES

In this section, we will offer an extensive discussion of different social and cultural processes underlying the process of modernization and that may explain secularization in the Netherlands. This enables us to formulate specific hypotheses. To begin with, however, we briefly pay attention to the general concept of secularization, formulate the dependent variable that describes this concept and enables us to formulate hypotheses, and explain in more detail the different types of effects we already mentioned in the Introduction.

After World War II, social and cultural developments in the Netherlands (e.g., the emergence of consumerism and state-regulated social security) had implications for the way individuals and social groups adjusted to one another, called "individualization." Dutch people were liberated from restrictive community structures (Nisbet 1976; Peters and Scheepers 2000). This process of individualization has also affected religion with secularization as one of its main consequences. In 1967, Berger described secularization as follows: "The modern West has produced an increasing number of individuals who look upon the world and their own lives without the benefit of religious interpretations" (1967:107–08). But, as Berger additionally declared, secularization also means the declining impact of religion on society as a whole as witnessed, for instance, by the separation between church and state in most Western societies. Moreover, churches may also secularize from within as they accommodate their viewpoints to the common viewpoints in society. Dobbelaere (2002) referred to these processes as societal and organizational secularization, respectively. For this article, we put aside these macro- and meso-level religious developments and instead focus on the micro level of the individual. Thus, we understand secularization as the secularization of individuals, or, as defined by Bruce, as "a decline in the extent to which people engage in religious practices, display beliefs of a religious kind, and conduct other aspects of their lives in a manner informed by such beliefs" (2002:3).

Secularization as liberation from restrictive religious congregations and their conservative values is also known as deinstitutionalization and detraditionalization (Peters, Felling, and Scheepers 2000). These processes imply, respectively, a decline in church involvement and Christian belief. In this article, church involvement is defined in terms of church attendance, and Christian belief is defined in terms of belief in a personal God or a higher power. When combining them, four categories of people arise, following Reitsma et al. (2012). The first category contains consistently religious people who attend church services on a regular basis and believe in God or a higher power. Second, there are solitary religious people who believe in God or a higher power but do not attend church services on a regular basis. Third, there are habitual attendants, who attend church services on a regular basis but do not believe in God or a higher power. And the fourth category contains seculars, who do not attend church services on a regular basis and do not believe in God or a higher power. In trying to explain secularization in the Netherlands over the last 50 years, we will focus on the two opposite extreme categories, that is, consistently religious people and seculars. We do so because in our research period, these categories made up the majority of the Dutch population, whereas the other categories were relatively marginal in the process of secularization.

Secularization is a long-term process that spans more than one generation. Intergenerational replacement has often played a key role in explaining changing values (Mannheim 1963). This intergenerational shift has also been demonstrated for religious values, with a shift from traditional religious values among older generations to secular values among younger generations (Inglehart 1990). Central to this explanation are the changes in the sociocultural context in which people grow up. This context is known to affect the religious values and beliefs, particularly of those in their formative years, just before reaching maturity. But, in addition to these cohort effects, periodical changes can also affect religious values (Inglehart 1990; Te Grotenhuis 1999). These changes are about events or social contexts (e.g., war or economic recession) that do not only affect people in their formative years, but have a simultaneous impact on the whole population.

Next to period and cohort effects, there are individual characteristics (e.g., gender and educational level) that are related to religiosity. But these characteristics as such do not explain the *process* of secularization. They can, however, when the impact of these characteristics on religiosity increases or decreases over time (Te Grotenhuis, Eisinga, and Scheepers, 2004). Individuals with similar social characteristics often flock together as a social group (McPherson, Smith-Lovin, and Cook 2001), and when interaction between such individuals intensifies (e.g., because the size of the social group changes), so will the exchange and confirmation of commonly shared values (Berger and Luckmann 1966), also concerning religion. In other words, there can be a change in the religiosity of a social subgroup of the population: individuals with certain social characteristics have become less religious and more secular or vice versa. In addition to period and cohort effects, changing individual effects is our third type of effects explaining the process of secularization.

### **Instances of Modernization and Hypotheses**

Now, let us give more detailed explanations of three instances of modernization and, subsequently, state several hypotheses that attempt to explain secularization in the Dutch context from the 1960s until now. We will distinguish between the following instances of modernization (Ruiter and Van Tubergen 2009):<sup>1</sup> modernization of ideologies, of economics, and of social ties. These explanations interact; there is an interplay (De Graaf, Need, and Ultee 2004) between motives (ideologies) and opportunities (economics and social ties). This interplay is complex, but it all contributes to “a general human sense of self-importance which makes traditional authoritarian dogmatic Christian religion unsustainable” (Bruce 2011:45).

#### **Modernization of Ideologies**

This instance of modernization means the emergence of a mechanistic and naturalistic worldview with a focus on critical thinking and scientific, proof-based methods (Berger 1967; Bruce 2011). This scientific rationalism conflicts with transcendental belief and undermines the cognitive basis of religious worldviews (Ruiter and Van Tubergen 2009). Scientific rationalism is at the center of Western school systems. There is much evidence of this negative connection between education and religiosity (e.g., Reitsma et al. 2012). Between the 1960s and the present, there has been a huge educational expansion in the Netherlands: in 1966, 3 percent of the Dutch population (aged 15–64 years) had completed higher vocational education or university; in 2015, this had gone up to 30 percent (Statistics Netherlands).<sup>2</sup>

Highly educated Dutch people can unite as a social group; “like seeks like,” based on shared norms and values. This is what McPherson et al. (2001) called “educational homophily.” When the density of highly educated people in Dutch society was low, the level of interaction within this social group may have been marginal. But with the increase in the number of highly educated people, the likelihood of social interaction has increased, which means that highly educated Dutch people have become increasingly influenced by other highly educated Dutch people, also concerning religiosity. In terms of Berger and Luckmann, the other highly educated Dutch function as “generalized others” who provide the “subjective establishment of a coherent and continuous

<sup>1</sup>Ruiter and Van Tubergen (2009) presented a fourth explanation about state regulation, which has not been used in this article, as there is no comparison between different countries.

<sup>2</sup>In this article, macro-level information about the Dutch population, concerning education, social security, and cohabitation patterns, is derived from Statistics Netherlands. This information is available online (<http://statline.cbs.nl> and [www.volkstellingen.nl](http://www.volkstellingen.nl)). The presented data are often own calculations; these are available upon request from the first author.

identity” (1966:153). Through this mechanism, for highly educated Dutch people, there is more exposure to and confirmation of secular norms and values, which results in a changing individual effect of education:

H1: Over time, highly educated Dutch people have become more likely to be secular and less likely to be consistently religious.

On the macro level, educational expansion means that highly educated Dutch people have become a more dominant social group. Their dominance scatters a secular worldview across the Dutch population, which in turn threatens the existing religious plausibility structure (Bruce 2011). Highly educated Dutch people thus do not only affect their in-group of fellow highly educated Dutch, but their rational outlook on life in the end also affects the less educated. This means that through educational expansion, the total level of religiosity in the Netherlands has decreased as a period effect:

H2: With the increase in the general level of education in the Netherlands over time, Dutch people have become more likely to be secular and less likely to be consistently religious.

Moreover, because of the increasing dominance of highly educated Dutch people, younger generations have been exposed in their formative years (more so than older generations) to a public life with dominating secular and rationalized worldviews. Hence, we expect a cohort effect:

H3: The higher the national level of education during Dutch people’s formative years, the more likely they are to be secular rather than consistently religious.

### **Modernization of Economics**

Modernization has increased social security; it reduces financial, political, and material insecurities. “Due to rising levels of human security, the public of virtually all advanced industrial societies have been moving toward more secular orientations,” commented Norris and Inglehart (2004:24–25) on this instance of modernization. Facing fewer economic risks—as a result of higher income or social care—decreases the importance of religiosity as a way of coping with socioeconomic insecurity. The negative link between social security and religiosity has already been demonstrated (e.g., Norris and Inglehart 2004; Ruiter and Van Tubergen 2009). In general, the economic situation in the Netherlands has improved considerably over the last 50 years. Soon after World War II, the Dutch government took over the care of vulnerable people from religious institutes and a comprehensive welfare state was created. In addition, between 1966 and 2015 the gross domestic product per capita of the Netherlands increased by a factor of 2.5 (The Conference Board 2016). Although there was much economic fluctuation in this period, the overall picture of the economic situation in the Netherlands after World War II is one of increasing financial and social security for the Dutch population at large.

In the 1960s, high-earning Dutch people were quite an exception to the norm (Statistics Netherlands). With the increase in prosperity in the Netherlands, the group of high earners began to grow, and so too did possibly the frequency of their mutual interaction. In these contacts—sometimes based not only on high income, but on occupation as well (McPherson et al. 2001)—Dutch people with high incomes were increasingly exposed within their social group to secular norms and values. Consequently, this results in a changing individual effect:

H4: Over time, Dutch people with high incomes have become more likely to be secular and less likely to be consistently religious.

Social security can also be experienced on a macro level, following Norris and Inglehart (2004). In times when the Dutch welfare state was constructed, more and more people were covered by the safety net of social care and, as a consequence, religiosity became under pressure. This macro-level development of increased social security is a period effect:

H5: With the general increase in social security in the Netherlands over time, Dutch people have become more likely to be secular and less likely to be consistently religious.

When a generation is raised in times of a high level of state-offered social security, this will negatively affect their religiosity. This is the cohort effect of the modernization of economics:

H6: The higher the national level of social security during Dutch people's formative years, the more likely they are to be secular rather than consistently religious.

### **Modernization of Social Ties**

In this part, we integrate Durkheim's (1912) insights regarding cohesion as part of the process of modernization that explains secularization. Central to his thesis is religion as a social phenomenon, controlled through the community. With individualization (Beck-Gernsheim 1997), social ties are weakened and so are the strength and control possibilities of social groups concerning religious matters. We will discuss this kind of modernization using two examples of disintegrating developments: changing patterns of cohabitation and diminishing Christian socialization.

The process of individualization drives changing family structures (Beck-Gernsheim 1997). Living alone has become more common and the nuclear family—a couple and their children—has become a less prevalent fundamental unit of cohabitation. For singles,<sup>3</sup> there is less peer pressure and social control. As demonstrated by Reitsma et al. (2012), singles are less likely to be religious than couples. In 1966, 20 percent of the Dutch population (aged 20–64) were single (Statistics Netherlands); by 2015, this proportion had doubled to 40 percent.

If singles unite as a social group, based on the principle “like seeks like” (McPherson et al. 2001), singles may increasingly interact among one another and confirm each other's secular values, with less control of the traditional family environment. Singles then function as a kind of “generalized other” to one another, to paraphrase Berger and Luckmann (1966), which eventually results in a changing individual effect:

H7: Over time, Dutch people who are single have become more likely to be secular and less likely to be consistently religious.

But the increase in the number of singles also makes their societal position more visible and dominant on the macro level. This may simultaneously result in a stronger general emphasis on the value of individual autonomy and individual choice, at the cost of the orientation toward the local community (Wilson 1982). Thus, the rise of singles as a more dominant group affects the values and worldview of the Dutch population at large, which negatively affects the overall level of religiosity in Dutch society. This is the period effect of changing patterns of cohabitation:

H8: With the increase in the proportion of Dutch people who are single over time, Dutch people have become more likely to be secular and less likely to be consistently religious.

<sup>3</sup>By “singles,” we mean people who live alone and have never been married or have never officially lived with another person. By this definition, widowers and divorced people are not single; they have at some point in the past been part of a “traditional family.”



Because younger generations, compared to older ones, were raised in times when weakened family ties with lower religious peer pressure had become the norm, their religiosity is affected negatively. This cohort effect means that:

H9: The higher the national level of singles during Dutch people's formative years, the more likely they are to be secular rather than consistently religious.

People who have been raised in a Christian environment internalize religious norms more strongly and comply with them more strongly later in life (Ruiter and Van Tubergen 2009). In this regard, De Graaf et al. (2004) showed that church retention is positively influenced by the degree of integration in a religious community. Of course, parents play a central role in the degree to which a child is socialized in a religion during his or her formative years (Vermeer, Janssen, and De Hart 2011). From this, we conclude that Dutch people who have been raised by their parents in a religious way, are more likely to be religious at a later age than Dutch people who have not been raised religiously. Although not as pronounced as the decline in church involvement and in Christian belief, over the last 50 years there has also been a decline in Christian socialization in the Netherlands. In 1966, 83 percent of the Dutch population (aged 18–70) was brought up in a Christian religion; by 2015, this proportion had dropped to 64 percent (GIN).<sup>4</sup>

Because of the decline in Christian socialization, the intergenerational transmission of religion has become more and more difficult (Voas 2010). For older generations, in the small and tight social environment of their formative years, institutional Christianity was ubiquitous. There was a symmetrical relationship between the religious values of the inside (family and friends) and outside social environments (Berger and Luckmann 1966), making this socialization very plausible and more successful in view of the people's religiosity in later life. Conversely, when the younger generations were in their formative years, institutional Christianity in Dutch society had become a rarer phenomenon. This caused Dutch people who had still been socialized in Christianity to falter their own socialization, which, subsequently, decreased this socialization impact on the rest of their lives. The demolition of the continuity of Christian socialization is a changing individual effect:

H10: Over time, Dutch people who have been socialized in Christianity have become more likely to be secular and less likely to be consistently religious.

In addition, because of the diminishing prevalence of Christian socialization on the macro level, Dutch people with a Christian socialization have become less visible and less dominant. For the secular Dutch people, Dutch people with a Christian socialization have increasingly become what Bruce (2014) called "alien," and the bigger the social gap between these groups, the smaller the likelihood that Dutch people with a Christian socialization can have an impact on the seculars. This is the period effect of diminishing Christian socialization:

H11: With the decrease in the general level of Christian socialization in the Netherlands over time, Dutch people have become more likely to be secular and less likely to be consistently religious.

The diminishing impact of Christian socialization on the macro level has an additional effect on the Dutch people who are in their formative years. This is a cohort effect:

H12: The lower the national level of Christian socialization during Dutch people's formative years, the more likely they are to be secular rather than consistently religious.

<sup>4</sup>These data are derived from the data sets GIN 1966 and 2015 (available at DANS, <https://dans.knaw.nl/en>).

## METHOD

### Data

There are two national surveys<sup>5</sup> that span religious developments in the Netherlands over the last decades. The first survey is GIN with five waves: 1966 (1,887 respondents), 1979 (1,220), 1996 (1,313), 2006 (1,123), and 2015 (2,197). The second survey is “Social and Cultural Developments in the Netherlands” (SOCON) with seven waves: 1979 (1,007 respondents), 1985 (3,003), 1990 (2,384), 1995 (2,019), 2000 (1,008), 2005 (1,375), and 2011/2012 (994). Data from these surveys are representative for the Dutch population.<sup>6</sup>

For our explanatory hypotheses, we use GIN data for 1966, 1979, and 2015 and SOCON data for 1995 and 2005 because these waves contain data, in terms of independent variables, that are most appropriate to test our hypotheses. In the explanatory analysis, we focus on the native Dutch population between 18 and 70 years of age, excluding immigrants. The five surveys together have 6,949 respondents for the explanatory analysis. In the remainder of this section, we will present the dependent and independent variables of our analysis.

### Dependent Variable

As stated previously, for the construction of our dependent variable, we combine church attendance and Christian belief. For church attendance, the response categories differ between GIN and SOCON data, with the former being less accurate (answer possibilities range from “regularly” to “never”) than the latter (from “about once a week” to “hardly ever/never”). In the GIN data, the concept of Christian belief is addressed in only one question, with the exclusive options “believe in a personal God,” “believe in a higher power,” “don’t know,” or “there is no God or higher power.” In the SOCON data, there are two separate questions for (Christian) belief: one for belief in a personal God and one for belief in a higher power (both have response categories that range from “entirely convinced” to “not convinced at all”). For a more detailed description of this construction, see Appendix 1. Over time, trends in religiosity are almost the same, but GIN data have higher levels of consistently religious people and lower levels of seculars (see Figures 1 and 2). By using a dummy variable for SOCON data in our explanatory analysis, we control for these differences.

### Independent Variables

We distinguish between three types of independent variables. The first type concerns the variables with data for the individual respondents from the five surveys, the second and third types concern the independent variables with data for, respectively, period and cohort indicators. Appendix 2 (Table A1) contains the descriptive statistics for the independent variables.

To start with the data for the individual respondents, the variable “education” records the respondent’s highest completed level of education and has four categories: low (1, elementary or lower vocational school), lower-middle (2, lower secondary school), upper-middle (3, secondary vocational school or O/A-levels), and high (4, higher vocational school or university). This variable is considered as continuous; missing data are replaced by the mean. In our surveys,

<sup>5</sup>All data sets, codebooks, and questionnaires are available at DANS: <https://dans.knaw.nl/en>.

<sup>6</sup>For GIN data, this is after the use of weighting factors, which correct somewhat skewed distributions in the surveys compared to the Dutch population, concerning age, gender, education, and region. GIN data represent the Dutch population of 17 years and older, SOCON data the Dutch population between 18 and 70 years of age. For our explanatory analysis, we use unweighted GIN data.

the variable “income” has been measured in different ways.<sup>7</sup> To make data comparable over time, we have constructed quartiles (interpreted as continuous) with the categories: low (1), lower-middle (2), upper-middle (3), and high (4). Missing data are replaced by the mean. The variable “cohabiting status” is dichotomous: single (1) and partner (2);<sup>8</sup> there are no missing data. “Christian socialization” is another dichotomous variable; based on the question if the respondent has been raised in a religiously, that is, Christian way, with categories yes (1) and no (2).<sup>9</sup> Very few instances of this variable are missing; these respondents have been excluded. These four independent variables with data for the individual respondents (education, income, cohabiting status, and Christian socialization) are used as individual variables as well as variables to test changing individual effects that can explain the *process* of secularization (see the “Methods” section for a description of how these effects have been constructed). The variables “gender,” which is dichotomous with either male (1) or female (2), and “age,” which is continuous and ranges from 18 to 70, both have no missing data. These two variables are only used as control variables (with no changing individual effects). The same applies for “degree of urbanization,”<sup>10</sup> which is another variable that is measured in different ways in the surveys used.<sup>11</sup> For this variable, three levels of urbanization are identified (considered as continuous): little or no (1), moderate (2), and (very) strong (3). Very few instances of this variable are missing; these respondents have been excluded. Our last independent variable with data for the individual respondents is “SOCON.” This variable is only used as a control variable and is dichotomous: yes (1) and no (2).

After the individual independent variables, we now come to our period and cohort indicators. We will derive period and cohort indicators from the theories presented above and approximate these with empirical substitutes (De Graaf 1999). Independent variables with data for period and cohort indicators will be presented together because the content of the data is the same and they have the same sources. For period indicators, social characteristics of the years of survey are taken: 1966, 1979, 1995, 2005, and 2015. For cohort indicators, the respondents of the five

<sup>7</sup>For the GIN surveys of 1966 and 1979, subjective classes of income were used (e.g., “the wealthy”), mainly derived from occupation. In the other surveys, respondents were asked directly for their monthly or yearly income (in classes).

<sup>8</sup>For the GIN surveys of 1966 and 1979, only marital status data are known. We presume that for these years, “not married” means that there is no partner involved. For all surveys, widowers and divorced people are assigned to the category “partner” because they used to have a partner in the past.

<sup>9</sup>For the SOCON surveys of 1995 and 2005, the extra intermediate category “a little” has been recoded as “yes.”

<sup>10</sup>Urbanization is often proposed as a disintegrating development, as part of the modernization of social ties (e.g., Reitsma et al. 2012; Ruiter and Van Tubergen 2009). People living in rural areas have stronger social ties and thus a greater likelihood of being controlled than people living in cities (Curtis-White and Guest 2003). Therefore, people in cities will be less religious and migration into the cities negatively affects religiosity. For the Netherlands over the last 50 years, however, urbanization has not been a strong and unambiguous process. In 1966, Dutch society was already reasonably urbanized, with a population density of 370 persons per square kilometer (Statistics Netherlands), and besides migration to Dutch cities, there has also been movement of (rich) urban people to rural areas (NIDI 2003). As a result, we choose to disregard the *process* of urbanization as an explanation for secularization in the Netherlands and use the degree of urbanization of Dutch people only as a control variable.

<sup>11</sup>For the GIN survey of 1966, three types of respondent residence are available: agglomerations (regarded as very strong or strong urbanization), other cities (moderate urbanization), and rural districts (little or no urbanization). For the GIN survey of 1979, we recoded a typology of the municipalities of the respondents, based on the main economic activity of the inhabitants and on the number of inhabitants: large and medium-sized towns (with a minimum of 50,000 inhabitants) in the urban center of the Netherlands fell into “(very) strong urbanization;” small and medium-sized towns (10,000–50,000 inhabitants) in the urban center of the Netherlands and resident municipalities of commuters into “moderate urbanization;” and rural municipalities and country towns into “little or no urbanization.” In the SOCON surveys of 1995 and 2005 and in the GIN survey of 2015, respondents are allocated to five classes of urbanization based on the population density (inhabitants per square kilometer) of their municipality: very strong (2,500 addresses or more per square kilometer); strong (1,500–2,500); moderate (1,000–1,500); little (500–1,500); and no urbanization (less than 500). These five classes were recoded into three classes, combining “very strong” and “strong” into one, and “little” and “no” into one.

surveys (6,949 altogether) are assigned to 10 categories of cohorts, based on their year of birth. The first birth cohort begins in 1896 (respondents who were aged 70 in the survey of 1966) and runs until 1909. From then, each birth cohort covers 10 years: 1910–1919, 1920–1929, and so on. The last birth cohort begins in 1990 and runs until 1997 (respondents who were aged 18 in the survey of 2015). Each birth cohort is converted to a “formative cohort” by adding 18 years to the birth cohort (so 1914–1927, 1928–1937, and so on). These cohorts stand for the years in the lives of the respondents when they were in their formative years, namely, just before reaching maturity (Inglehart 1990; Mannheim 1963). The data used for cohort indicators are the means of all the years, mostly 10, that constitute the formative cohorts. The independent variables with period and cohort indicators have no missing data. The first two independent variables with period and cohort data are about “educational expansion:” the number of Dutch people between 15 and 64 years of age who completed higher vocational education or university, as a proportion of the total Dutch population between 15 and 64 (Statistics Netherlands). Second, we constructed two variables with period and cohort data about the “development of social security:” the number of Dutch people who received social payment, as a proportion of the total Dutch population between 20 and 64 years of age (Statistics Netherlands). For “changing patterns of cohabitation,” we used period and cohort data about the number of Dutch people between 20 and 64 years of age who are single (living alone, never been married, and have never had an official partner), as a proportion of the total Dutch population between 20 and 64 (Statistics Netherlands). Our last two independent variables with period and cohort data are about “diminishing Christian socialization:” the number of Dutch people between 18 and 70 years of age who have had a Christian socialization, as a proportion of the total Dutch population between 18 and 70 (GIN and SOCON).<sup>12</sup>

### Analytical Strategy

Because of our categorical dependent variable, we use multinomial logistic regression (NOM-REG) for the explanatory analyses. The results represent the situation of seculars compared to consistently religious people, our focus in the Dutch process of secularization. The categories solitary religious people and habitual attendants are included in the analysis, but the results for these groups are not interpreted and only presented in Appendix 3 (Tables A2 and A3).

Our explanatory analysis is built up with four models. Before focusing on the process of secularization, we test in Model 1 the individual effects, including our control variables age, gender, and degree of urbanization. In Model 2, we construct interaction effects between the year of survey and the independent individual variables (education, income, single, and Christian socialization) with the aim to test changing individual effects.<sup>13</sup> Period and cohort variables have very similar developments and there is an overlap in the period examined (for period 1966–2015 and for cohort 1914–2015). Unfortunately, this causes multicollinearity, the problem of period and cohort effects that are strongly correlated to each other. This multicollinearity, which often occurs in social science (Te Grotenhuis et al. 1998), means that simultaneous tests of period and cohort effects in one model are not possible. In the analysis of period effects (Model 3), controlled for individual effects, multicollinearity occurs between educational expansion and

<sup>12</sup>In the total Dutch population, immigrants are excluded. For SOCON data, Christian socialization includes “a little.” Data for Christian socialization, derived from survey research, offer the opportunity to zoom in to a regional level (North, East, South, and West) instead of the national level. This addresses the considerable differences in the degree of Christian socialization within the Netherlands. Thirty-one respondents have missing data for region. These respondents were allocated the national level of Dutch people with a Christian socialization.

<sup>13</sup>For this interaction (1966 = 0, 1979 = 13, 1995 = 29, 2005 = 39, and 2015 = 49), the four individual variables are recoded into dummies with values of “0” (not highly educated, low or middle income, with a partner, and with no Christian socialization); and “1” (highly educated, high income, single, and with Christian socialization).

Table 1: Results, multinomial logistic regression (Bs): seculars compared to consistently religious people

	Model 1	Model 2	Model 3a	Model 3b	Model 4a	Model 4b
	Individual	Individual + year	Individual + period	Individual + period	Individual + cohort	Individual + cohort
Intercept	.665**	1.996***	-1.583**	.320	.035	1.985***
SOCON	.795***	.482***	.349***	.391***	.425***	.424***
<b>Individual effects:</b>						
Education	.519***	.187***	.096*	.086*	.140***	.074
Income	-.039	-.051	.093	.097*	.044	.088
Single	-.223*	-.948***	-.278**	-.279**	-.294**	-.289**
Christian socialization	-3.223***	-4.329***	-3.182***	-3.202***	-3.186***	-3.210***
Male	.184**	.300***	.342***	.350***	.342***	.363***
Age	.001	-.014***	-.015***	-.015***	.032***	.039***
Degree of urbanization	.393***	.417***	.434***	.432***	.424***	.431***
<b>Changing individual effects:</b>						
Highly educated		-.002				
High incomes		.021***				
Singles		.024***				
Christian socialized		.047***				
<b>Period and cohort effects:</b>						
Educational expansion			not tested	.096***	not tested	.160***
Development of social security			.052***	.009	.117***	not tested
Changing patterns of cohabitation			.102***	Not tested	-.017*	-.122***
Diminishing Christian socialization			-.003	-.001	-.013**	-.005
R <sup>2</sup> Nagelkerke	.293	.342	.347	.350	.348	.354
Number of respondents	6,949	6,949	6,949	6,949	6,949	6,949

\*\*\*  $p < .001$ ; \*\*  $p < .01$ ; \*  $p < .05$ .

changing patterns of cohabitation.<sup>14</sup> Because there is no clear dominant independent variable in terms of the explained variance of our dependent variable,<sup>15</sup> we decided to split the model of period effects and test both period effects separately. Model 3a includes changing patterns of cohabitation and excludes educational expansion; Model 3b includes educational expansion and excludes changing patterns of cohabitation. In Model 4, we test cohort effects, controlled for individual effects. Because educational expansion shows multicollinearity with the development of social security and there is no clear dominant independent variable in the explanation of the variance of our dependent variable,<sup>16</sup> again we decided to split the model. Model 4a includes the development of social security and excludes educational expansion. Model 4b includes educational expansion and excludes the development of social security. All models have variance inflation factors (VIFs) that do not exceed a value of 3.5, far from the often used cutoff value of 10 (Best and Wolf 2014).

Table 1 contains the results of the explanatory analysis for the seculars compared to consistently religious people. A positive and significant B-parameter means that the independent variable has a positive effect on being secular and thus a negative effect on being consistently religious. A negative and significant B-parameter means the independent variable has a negative effect on being secular and thus a positive effect on being consistently religious. Before jumping

<sup>14</sup>Pearson correlation coefficient is .97.

<sup>15</sup>R<sup>2</sup> Nagelkerke for educational expansion is .17, for changing patterns of cohabitation, it is .15.

<sup>16</sup>For educational expansion and the development of social security, Pearson correlation coefficient is .82. R<sup>2</sup> Nagelkerke for educational expansion is .12 and for the development social security, it is .14.

to the results, we briefly discuss the results for the SOCON dummy. Table 1 shows in all models positive and significant B-parameters for this independent variable. This means that the likelihood to be secular is higher for SOCON data than for GIN data (see also Figure 2). The significant B-parameters justify the inclusion of the SOCON dummy in our analysis.

**RESULTS**

**Developments**

Let us first consider the Dutch process of secularization from a descriptive perspective. Between 1966 and 2015, the proportion of the Dutch population (between 18 and 70 years of age) that is consistently religious dropped from 59 percent to 14 percent. By contrast, the proportion of seculars rose from 15 percent to 55 percent (Figures 1 and 2). These trends, derived from GIN

Figure 1  
Development consistently religious people

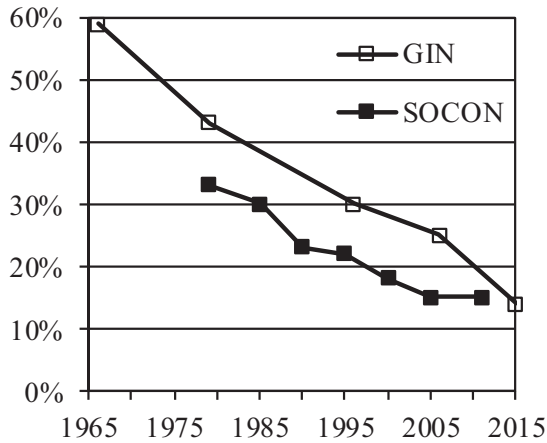
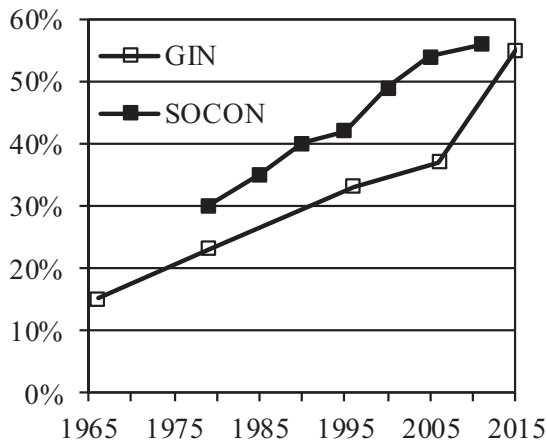


Figure 2  
Development seculars



and SOCON data, are similar, but because of differences in the construction of the dependent variable, the proportions of consistently religious people are lower and the proportions of seculars are higher in the SOCON data than in the GIN data. At the end of the research period, the results closely match.

### Multivariate Explanatory Analysis

We will describe our results of the explanatory analysis following the three instances of modernization as an explanation for secularization. First, we will present the results for the modernization of ideologies. According to Model 1, higher educated Dutch people are more likely to be secular than lower educated Dutch people ( $B = .519$ ). When we turn to explaining the *process* of secularization, Model 2 shows that there is no changing individual effect for highly educated Dutch ( $B = -.002$ ). In other words, highly educated Dutch people have not become significantly more likely to be secular over time; so our Hypothesis 1 is falsified. When it comes to the period effect of educational expansion, Model 3b gives a significant and positive effect ( $B = .096$ ), which means that educational expansion in the Netherlands between 1966 and 2015 has increased the likelihood of Dutch people to be secular. Or vice versa, the educational expansion has had a negative impact on the religiosity of Dutch people. The same applies to the cohort effect of educational expansion, which can be found in Model 4b ( $B = .160$ ). Younger generations of Dutch were raised in a social context with higher national levels of education and therefore are more likely to be secular instead of consistently religious than older generations. These findings about the Dutch educational expansion confirm our Hypotheses 2 and 3. In addition, the period effect of educational expansion strongly reduces the individual effect of education (Model 3b) and the cohort effect even nullifies it (Model 4b).

Regarding the modernization of economics, we have found no individual effect of the personal economic situation, in terms of income, on secularity in the Netherlands ( $B = -.039$ ; Model 1). However, according to Model 2, there is a significant and positive changing individual effect of high incomes ( $B = .021$ ), implying that Dutch people with high incomes have increasingly become secular over time; our Hypothesis 4 is supported. When we switch to the macro level in Model 3a, there seems to be a period effect for the development of social security ( $B = .052$ ). However, inclusion of educational expansion in Model 3b led to the disappearance of the period effect of social security ( $B = .009$ ). We therefore deduce that the general increase in social security in the Netherlands over the last 50 years has not increased the likelihood to be secular contrary to being consistently religious; thus our Hypothesis 5 is falsified. According to Model 4a, the modernization of economics has a cohort component. This significant and positive effect ( $B = .117$ ) implies that younger generations of Dutch who were raised in times with higher national levels of social security are more likely to be secular instead of consistently religious than older generations. We propose that our Hypothesis 6 is supported, with a proviso: because we were unable to control for another cohort effect—due to multicollinearity with educational expansion—we cannot rule out the impact of the cohort effect of the development of social security.

For the modernization of social ties, we distinguish between changing patterns of cohabitation and diminishing Christian socialization. According to Model 1, there is an individual effect of the pattern of cohabitation ( $B = -.223$ ): Dutch people who are single are less likely to be secular than Dutch people who have a partner. This negative individual effect returns in all other models, a remarkable finding. We will return to it in the “Conclusion and Discussion” section. As shown in Model 2, between 1966 and 2015, the likelihood to be secular has increased for Dutch people who are single ( $B = .024$ ); this changing individual effect is in line with our Hypothesis 7. In Model 3a, we see that there is a significant and positive period effect of changing patterns of cohabitation ( $B = .102$ ), supporting our Hypothesis 8: the higher levels of singles



in Dutch society over time have increased the likelihood of being secular for the entire Dutch population. On the other hand, in Models 4a and 4b, we find a cohort effect contradictory to what we expected. The cohort effect is negative ( $B = -.122$  in Model 4b), which means that the higher the number of singles in Dutch society during people's formative years, the less likely Dutch people are to be secular and the more likely they are to be consistently religious. This means that our cohort hypothesis for changing patterns of cohabitation (Hypothesis 9) is falsified.

Christian socialization is still an important determinant of religiosity; in Model 1, the individual effect is negative and significant ( $B = -3.223$ ) and this applies to all models. But this connection is under pressure. Model 2 shows a significant and positive changing individual effect ( $B = .047$ ): over time, Dutch people who have been socialized in the Christian faith have become more likely to be secular and less likely to be consistently religious. Our Hypothesis 10 is supported. In Models 3a and 3b, we find no significant period effects ( $B$ s are, respectively,  $-.003$  and  $-.001$ ). Diminishing Christian socialization in Dutch society has not increased the likelihood of the Dutch population in total to become secular. In Model 4a, there seems to be a cohort effect for diminishing Christian socialization ( $B = -.013$ ); however, this effect disappears in Model 4b ( $B = -.005$ ) after the inclusion of the cohort effect of educational expansion. So, being raised in times with a lower level of Christian socialization has not increased the likelihood to be secular. Both our macro-level hypotheses for this aspect of the modernization of social ties (Hypotheses 11 and 12) are falsified.

Although not part of our explanation of the Dutch process of secularization, we end this "Results" section with pointing at some interesting results concerning our control variables. In all models, men are more likely to be secular and less likely to be consistently religious than women. The negative effect of aging on secularity in Models 2 and 3 (a and b), indicating that older Dutch people are less likely to be secular than younger Dutch people, reverses in Model 4 (a and b) after controlling for cohort effects. This means that, when we control for social and cultural circumstances during the formative years (e.g., the levels of education and social security in Dutch society), older Dutch people are more likely to be secular and less likely to be consistently religious than younger Dutch people. Finally, in all models, the control variable, degree of urbanization, has a positive effect on secularity.<sup>17</sup> In other words, Dutch city dwellers are more likely to be secular and less likely to be consistently religious than Dutch people living in rural areas. Table 2 summarizes our results in a schematic way.

Table 2: Likelihood to be secular instead of consistently religious

Changing individual effects:			Period and cohort effects:	Period		Cohort	
	hypoth.	result		hypoth.	result	hypoth.	result
Highly educated	+	0	Educational expansion	+	+	+	+
High income	+	+	Development social security	+	0	+	+
Single	+	+	Changing patterns of cohabitation	+	+	+	-
Christian socialized	+	+	Diminishing Christian socialization	+	0	+	0

Note: - = negative relationship, + = positive relationship, 0 = no (significant) relationship.

<sup>17</sup>An additional analysis has revealed that the *process* of urbanization has not affected the process of secularization in the Netherlands between 1966 and 2015, not as changing individual effect, nor as a period or cohort effect.



## CONCLUSION AND DISCUSSION

The process of secularization in the Netherlands over the last 50 years—in terms of the decline of consistently religious Dutch people and the rise of secular Dutch people—is clear. Our research question has an explanatory nature: To what extent can secularization in the Netherlands between 1966 and 2015, in terms of the decline of institutional Christianity, be explained from a modernization theory perspective, unfolded in terms of period and cohort effects, next to changing individual effects? We have set out to investigate a long-term process, with 50 years of high-quality data, and to distinguish between different kinds of effects. After explicating modernization theory in its partial explanations and derived specific hypotheses, we have tested these in the Dutch case of secularization very extensively. Let us review and interpret the impact of three instances of modernization (of ideologies, of economics, and of social ties) and relate these to the findings of previous research.

Our first theoretical perspective explaining secularization is the modernization of ideologies. The impact of the educational level of individuals on their religiosity has been tested previously; however, with mixed results (e.g., Norris and Inglehart 2004; Reitsma et al. 2012; Ruiter and Van Tubergen 2009; Voas and McAndrew 2012). In this article, we provided evidence on the national level: educational expansion as a period and cohort effect has played a significant role in the Dutch process of secularization. Through educational expansion between 1966 and 2015, high levels of education have become mainstream and dominant in Dutch society. It seems that the accompanying scientific rationalism is increasingly shared nationwide, which has had a negative impact on the religiosity of the Dutch population and, moreover, specifically on younger people in their formative years.

Concerning the modernization of economics, Dutch people with high incomes have become increasingly more likely to be secular over the last 50 years. A main focus of scholars is on macro-level social security-induced secularity. The period effect of the development of social security was not significant in the Netherlands: the general increase of social security over the last 50 years has not increased secularity among the Dutch population. This is opposite to other studies (Norris and Inglehart 2004; Reitsma et al. 2012; Ruiter and Van Tubergen 2009), which show that social security in Western countries as a period effect positively affects secularity. However, there does seem to be a cohort effect: it appears that the oldest generations of Dutch people, who grew up before World War II, experienced very low levels of social security and continued to be consistently religious. But, as the welfare state expanded, younger generations of Dutch people in their formative years experienced more existential security, which drove them to secularity. This explanation is presented with some hesitation. In the Netherlands, the development of educational levels is very similar to that of social security and because we were unable to disentangle these two cohort effects, due to multicollinearity, we cannot be sure which cohort effect is dominant. In this regard, caution is recommended and further investigation is needed.

Our hypotheses on the modernization of social ties, indicated by changing patterns of cohabitation, are not unambiguously supported. Following the argument of individualization theories, we expected Dutch singles to have become more likely secular than Dutch people with partners, which is actually what we have found. On the macro level, we have found a period effect: with the rise of singles in the Netherlands, the Dutch population has become more likely to be secular, evidence for a previously rarely tested hypothesis for which Reitsma et al. (2012) did not find a result in Europe. The cohort effect of changing patterns of cohabitation is, however, contrary to what we expected: the higher the proportion of singles in Dutch people's formative years, the less likely these cohorts are to be secular. Examining data for older generations of Dutch people can explain this outcome. These older generations were characterized by relatively high levels of singles, but these singles rarely broke away from their social (religious) environment. When these generations were raised, marriage was the norm—but not always possible, for economic and cultural reasons, especially in the Catholic part of the Netherlands (NIDI 2003). In the first

half of the 20th century, many Dutch people were single against their will, and these singles were definitely not less likely to be consistently religious than other Dutch people. Older generations of Dutch people with high levels of consistently religious singles have, in addition to the cohort effect, contributed to another unexpected effect, in terms of individualization. These generations were prominent in the first decades of our research period, the 1960s and 1970s, and thus in our first two surveys of GIN 1966 and 1979. This explains why, despite the changing individual effect of Dutch singles who have become more likely to be secular over time, in the end, these singles are still less likely to be secular than Dutch people with a partner. Following this elucidation, for the older cohorts, being single was, with the benefit of hindsight, not a valid indicator of individualization in the Netherlands and not a possible explanation for secularization. In recent times, however, being single surely is an indicator of individualization, resulting in the changing individual and the period effect as described.

We have approached the modernization of social ties also with a second explanation: diminishing Christian socialization. Although this socialization remains an important condition for religiosity later in life, this effect has weakened over time. Over the last decades, Christian socialization of the youngest generations of Dutch people has increasingly taken place in a secular context, putting this socialization under pressure, which means that it is less likely to have a long-lasting effect on the religiosity of the younger generations. But this erosion of plausibility only affects Dutch people who have experienced Christian socialization—a section of the Dutch population who soon will be a minority. On a macro level, the changing context of diminishing Christian socialization does not affect religiosity in the Netherlands—as a period effect or as a cohort effect—which seemingly contradicts previous cross-national evidence by Ruiter and Van Tubergen (2009), who found that people who were raised in religious societies have higher church attendance rates than people in more secular societies. Our changing individual effect of diminishing Christian socialization seems a specific cohort effect: only Dutch people who were socialized in a Christian tradition have been affected by the diminishing plausibility of religious values, not the other Dutch who were already secular in their formative years.

Valid measurements of the three types of modernization are complex matters. Explaining the process of secularization over a long period means dealing with complicated social processes. We have approached these processes with—to our knowledge—the best operationalizations currently available, although we have to acknowledge that these national statistics serve just as approximations. Educational expansion may be a valid indicator of the spread of scientific rationalism in Dutch society, but there may be more, unmeasured and unavailable, indicators to capture modernization of ideologies. Could a similar argument be made on the proportion of singles in society indicating individualization? The latter turned out to be an invalid cohort indicator for individualism and the modernization of social ties for older generations, although it is a valid indicator for these processes for younger generations. A sophisticated approach—and thus, the improvement of the validity of these operationalizations—may improve the research, although the availability of such high-quality data is somewhat limited.

Social reality is complex and the factors that explain secularization in the Netherlands interact with each other. As stated previously, we were unable to simultaneously test cohort effects of educational expansion and the development of social security in one model due to multicollinearity. Another hesitation concerns the integration of period and cohort effects into one model, which turned out to be technically impossible, also due to multicollinearity. It seems that educational expansion has both a period effect and a cohort effect, but we must be cautious. What we can safely state is that educational expansion has contributed strongly to secularization of the Netherlands over the last 50 years and that this modernization of ideologies seems to be more important for explaining secularization than the modernization of economics and social ties. This conclusion applies to the native Dutch population and raises the question to what extent it could also apply to people who have migrated to the Netherlands during the past decades or to the population of other Western countries.

With regard to the possible effects on migrants, Turkish and Moroccan Dutch are the largest groups of migrants in the Netherlands and they are mainly Muslim, but the national process of educational expansion has not driven them to secularity (Maliepaard and Gijsberts 2012). Perhaps it eventually will, if the process of catching up their lag in the level of education, compared to the native Dutch, continues (Statistics Netherlands) and highly educated Turkish and Moroccan Dutch are no longer a minority among their own ethnic group. But for now, secularization hardly occurs among these groups because, we assume, religion may still function as an important identity marker for Turkish and Moroccan Dutch (Maliepaard and Gijsberts 2012). Such an identity marker helps them in their cultural transition from their country of origin to their, often unhospitable, country of establishment and thus retards secularization (Bruce 2011).

Educational expansion is not only a Dutch phenomenon—most if not all Western populations have gone through this process. However, countries differ in the degree and period of this expansion and this will affect the extent to which educational expansion will drive secularization. In addition, even in countries with a similar level of educational expansion, its effect on secularization will probably differ. We propose that the secularizing effect of educational expansion, as well as of other social processes like the development of social security or individualization, are also dependent on national contexts. In other words, even if the process of educational expansion is very similar in two countries, its effect on secularization can be different due to the way religion is embedded in these countries. The recent developments in Poland may serve as a good example in this respect. In Poland, there has been a large increase of the highly educated part of the population over the last few decades (OECD 2016). But in this country, religion until very recently served as an important tool for cultural defense, which, according to Bruce (2011), slowed down the process of secularization. In Poland, Catholicism served to uphold a distinctive Polish culture against communism and continued to be of importance despite rising levels of education among the Polish people. Because of this diversity of national contexts, we recommend extensive empirical tests of macro-level effects of the modernization of ideologies, economics, and social ties on the process of secularization in other Western countries separately.

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**APPENDIX 1: CONSTRUCTION OF DEPENDENT VARIABLE**

For data from God in the Netherlands (GIN):

Christian belief: Which of the following statements approximates your own conviction?

Answer possibilities:

- a) There is a God who occupies himself personally with everyone.
- b) There must be something like a higher power who controls life.
- c) I don't know whether a God or a higher power exists.
- d) There is no God or higher power.

Church attendance: Do you regularly go to church or a religious community?

Answer possibilities:

- a) regularly
- b) sometimes
- c) only very seldom
- d) never

		Belief			
		Personal God	Higher power	Don't know	No God/no higher power
GIN					
Church attendance	Regularly	Consistently religious		Habitual attendants	
	Sometimes				
	Only very seldom	Solitary religious		Seculars	
	Never				

For data from Social and Cultural Developments in the Netherlands (SOCON):

Christian belief consists of two items ("What do you think of the following statements?"):

- 1) There is a God who occupies himself personally with everyone.
- 2) There must be something like a higher power who controls life.

Answer possibilities:

- a) entirely convinced
- b) convinced
- c) in uncertainty
- d) not convinced
- e) not convinced at all
- f) never thought about it (respondents who answer "never thought about it" on two items, or on one item "never thought about it" in combination with "in uncertainty/not convinced/not convinced at all" for the other item, are scored as "missing")

Church attendance: Do you ever attend the services of a Christian church or religious community?

Answer possibilities:

- a) yes, about once a week

- b) yes, about once a month
- c) yes, once or twice a year
- d) no, hardly ever/never

SOCON		Belief:	
		God/higher power*	No God and no higher power**
Church attendance	Yes, about once a week	Consistently religious	Habitual attendants
	Yes, about once a month		
	Yes, once or twice a year	Solitary religious	Seculars
	No, hardly ever/never		

\*There is a God who occupies himself personally with everyone = (entirely) convinced or there must be something like a higher power who controls life = (entirely) convinced.

\*\*There is a God who occupies himself personally with everyone = in uncertainty/not convinced/not convinced at all and there must be something like a higher power who controls life = in uncertainty/not convinced/not convinced at all.

## APPENDIX 2: DESCRIPTIVE STATISTICS INDEPENDENT VARIABLES

Table A1: Descriptive statistics: independent variables

	<i>n</i>	Min	Max	Mean	<i>SD</i>
Individual					
Education	6,949	1	4	2.32	1.19
Income	6,949	1	4	2.43	.80
Single	6,949	1	2	1.83	.37
Christian socialization	6,949	1	2	1.26	.44
Male	6,949	1	2	1.53	.50
Age	6,949	18	70	43.90	14.83
Degree of urbanization	6,949	1	3	2.00	.86
SOCON	6,949	1	2	1.58	.49
Period					
Educational expansion	6,949	3.2	30.5	17.89	9.88
Development of social security	6,949	9.8	22.6	17.47	4.38
Changing patterns of cohabitation	6,949	19.5	40.1	28.89	7.85
Diminishing Christian socialization	6,949	46.5	96.7	73.88	11.36
Cohort					
Educational expansion	6,949	.4	28.5	6.87	7.27
Development of social security	6,949	.4	22.7	11.40	7.89
Changing patterns of cohabitation	6,949	18.6	37.4	24.50	4.90
Diminishing Christian socialization	6,949	42	100	74.11	12.53

**APPENDIX 3: RESULTS OF EXPLANATORY ANALYSIS FOR SOLITARY RELIGIOUS PEOPLE AND  
HABITUAL ATTENDANTS**

Table A2: Results, multinomial logistic regression (*B*s): solitary religious people compared to consistently religious people

	Model 1 individual	Model 2 individual + year	Model 3a individual + period	Model 3b individual + period	Model 4a individual + cohort	Model 4b individual + cohort
Intercept	.577**	1.378***	-.510	.343	.881	2.095***
SOCON	.693***	.379***	.173	.230*	.378***	.363***
<b>Individual effects:</b>						
Education	.237***	.014	-.004	-.009	.001	-.022
Income	-.070	-.048	.021	.023	-.014	.005
Single	-.455***	-.713***	-.436***	-.439***	-.480***	-.471***
Christian socialization	-2.296***	-2.799***	-2.284***	-2.297***	-2.294***	-2.298***
Male	-.109	-.031	-.025	-.021	-.014	-.005
Age	.003	-.015*	-.005	-.005	.019***	.022***
Degree of urbanization	.401***	.423***	.420***	.421***	.424***	.425***
Changing individual effects						
Highly educated		-.004				
High incomes		.015**				
Singles		.049*				
Christian socialized		.026***				
<b>Period and cohort effects:</b>						
Educational expansion			Not tested	.040**	Not tested	.079***
Development of social security			.063***	.038**	.066***	Not tested
Changing patterns of cohabitation			.040***	Not tested	-.029***	-.079***
Diminishing Christian socialization			-.004	-.003	-.007	-.005
$R^2$ Nagelkerke	.293	.342	.347	.350	.348	.354
Number of respondents	6,949	6,949	6,949	6,949	6,949	6,949

\*\*\*  $p < .001$ ; \*\*  $p < .01$ ; \*  $p < .05$ .

Table A3: Results, multinomial logistic regression (*Bs*): habitual attendants compared to consistently religious people

	Model 1 individual	Model 2 individual + year	Model 3a individual + period	Model 3b individual + period	Model 4a individual + cohort	Model 4b individual + cohort
Intercept	-2.517 <sup>***</sup>	-1.354 <sup>*</sup>	-5.644 <sup>***</sup>	-4.309 <sup>***</sup>	-2.590 <sup>***</sup>	-1.395
SOCON	1.205 <sup>***</sup>	1.063 <sup>***</sup>	.691 <sup>**</sup>	.755 <sup>***</sup>	.841 <sup>***</sup>	.817 <sup>**</sup>
<b>Individual effects:</b>						
Education	.310 <sup>***</sup>	-.059	.052	.047	.084	.048
Income	-.081	-.164	.011	.014	-.052	-.026
Single	-.049	1.034 <sup>**</sup>	-.043	-.045	-.012	-.006
Christian socialization	-1.168 <sup>***</sup>	-1.950 <sup>***</sup>	-1.241 <sup>***</sup>	-1.257 <sup>***</sup>	-1.295 <sup>***</sup>	-1.306 <sup>***</sup>
Male	.261	.351 <sup>*</sup>	.346 <sup>*</sup>	.351 <sup>*</sup>	.351 <sup>*</sup>	.365 <sup>*</sup>
Age	.004	-.007	-.005	-.005	.016 <sup>*</sup>	.020 <sup>**</sup>
Degree of urbanization	-.045	-.014	.005	.004	.010	.014
Changing individual effects						
Highly educated		.012				
High income		.022 <sup>*</sup>				
Single		-.042 <sup>**</sup>				
Christian socialized		.035 <sup>***</sup>				
<b>Period and cohort effects:</b>						
Educational expansion			Not tested	.062 <sup>***</sup>	Not tested	.094 <sup>***</sup>
Development of social security			.055 <sup>*</sup>	.021	.072 <sup>***</sup>	Not tested
Changing patterns of cohabitation			.067 <sup>***</sup>	Not tested	-.064 <sup>**</sup>	-.124 <sup>***</sup>
Diminishing Christian socialization			.016	.017	.012	.015
$R^2$ Nagelkerke	.293	.342	.347	.350	.348	.354
Number of respondents	6,949	6,949	6,949	6,949	6,949	6,949

\*\*\*  $p < .001$ ; \*\*  $p < .01$ ; \*  $p < .05$ .