

University of Groningen

## Praying in a Secularized Society

Bänziger, Sarah; Janssen, Jacques; Scheepers, Peer

*Published in:*  
The International Journal for the Psychology of Religion

*DOI:*  
[10.1080/10508610802117517](https://doi.org/10.1080/10508610802117517)

**IMPORTANT NOTE: You are advised to consult the publisher's version (publisher's PDF) if you wish to cite from it. Please check the document version below.**

*Document Version*  
Publisher's PDF, also known as Version of record

*Publication date:*  
2008

[Link to publication in University of Groningen/UMCG research database](#)

*Citation for published version (APA):*

Bänziger, S., Janssen, J., & Scheepers, P. (2008). Praying in a Secularized Society: An Empirical Study of Praying Practices and Varieties. *The International Journal for the Psychology of Religion*, 18, 256. DOI: 10.1080/10508610802117517

**Copyright**

Other than for strictly personal use, it is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), unless the work is under an open content license (like Creative Commons).

**Take-down policy**

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

*Downloaded from the University of Groningen/UMCG research database (Pure): <http://www.rug.nl/research/portal>. For technical reasons the number of authors shown on this cover page is limited to 10 maximum.*

This article was downloaded by: [University of Groningen]

On: 12 November 2009

Access details: Access Details: [subscription number 907173570]

Publisher Routledge

Informa Ltd Registered in England and Wales Registered Number: 1072954 Registered office: Mortimer House, 37-41 Mortimer Street, London W1T 3JH, UK



## International Journal for the Psychology of Religion

Publication details, including instructions for authors and subscription information:

<http://www.informaworld.com/smpp/title~content=t775653664>

### Praying in a Secularized Society: An Empirical Study of Praying Practices and Varieties

Sarah Bänziger <sup>a</sup>; Jacques Janssen <sup>a</sup>; Peer Scheepers <sup>a</sup>

<sup>a</sup> Radboud University,

**To cite this Article** Bänziger, Sarah, Janssen, Jacques and Scheepers, Peer 'Praying in a Secularized Society: An Empirical Study of Praying Practices and Varieties', International Journal for the Psychology of Religion, 18: 3, 256 – 265

**To link to this Article:** DOI: 10.1080/10508610802117517

**URL:** <http://dx.doi.org/10.1080/10508610802117517>

PLEASE SCROLL DOWN FOR ARTICLE

Full terms and conditions of use: <http://www.informaworld.com/terms-and-conditions-of-access.pdf>

This article may be used for research, teaching and private study purposes. Any substantial or systematic reproduction, re-distribution, re-selling, loan or sub-licensing, systematic supply or distribution in any form to anyone is expressly forbidden.

The publisher does not give any warranty express or implied or make any representation that the contents will be complete or accurate or up to date. The accuracy of any instructions, formulae and drug doses should be independently verified with primary sources. The publisher shall not be liable for any loss, actions, claims, proceedings, demand or costs or damages whatsoever or howsoever caused arising directly or indirectly in connection with or arising out of the use of this material.

---

## RESEARCH

---

# Praying in a Secularized Society: An Empirical Study of Praying Practices and Varieties

Sarah Bänziger, Jacques Janssen, and Peer Scheepers  
*Radboud University*

Social scientific studies from the secular Netherlands has pointed out that religious rituals such as praying are still widely present. This study examines the content of the praying practices of the Dutch and distinguishes varieties of prayer by analyzing answers to open-ended questions of a representative Dutch survey ( $N = 1,008$ ). It is concluded, first, that a majority of the Dutch prays. Second, four varieties of prayer are distinguished: petitionary, religious, meditative, and impulsive prayer. Comparing these varieties with types of prayer found in other empirical studies, it emerges that the petitionary and religious prayer are similar to classical prayers found in other studies from less secularized countries, whereas the meditative and impulsive prayers are fundamentally different from other prayer types and can be considered as examples of a praying practice in a secularized society.

Praying is a widespread and an important religious phenomenon from all places and all times (Di Nola, 1961; Heiler, 1921), or as Selbie (1924) put it, “prayer is wide as the world and older than history” (p. 207). Some consider praying

---

Correspondence should be sent to Sarah Bänziger, Department of Cultural Psychology and Psychology of Religion, Radboud University, PO Box 9104, 6500 HE Nijmegen, The Netherlands. E-mail: sarahbanziger@yahoo.co.uk

even as “the centre and soul of all religion” (Hodge, as cited in Francis & Evans, 1995; James, 1902/1995). In addition, Argyle and Beit-Hallahmi (1975) recommended the study of praying because praying seems to be a more resistant religious phenomenon than church membership and church attendance, even in secularized countries. Several studies showed, indeed, that praying practices are still alive in a secularized society such as the Netherlands (De Hart, 2006; Dekker, Bernts, & De Hart, 2007; Halman, 2001; Janssen, Prins, Van der Lans, & Baerveldt, 2000).

Our study focuses on the praying practices of the Dutch, in particular those practices outside of the church. Only few empirical studies have been devoted to this type of private religious practice. Empirical studies addressing praying focus mainly on the description of varieties of prayer, such as the studies of Poloma and Gallup (1991); Hood, Morris, and Harvey (as cited in Spilka, Hood, Hunsberger, & Gorsuch, 2003); Laird, Snyder, Rapoff, and Green (2004); and Luckow et al. (as cited in Hill & Hood, 1999). In all these studies a wide range of prayer types were distinguished, however, classical prayers such as the petitionary prayer and colloquial or liturgical prayers are found in all studies. In contrast, Ladd and Spilka (2002) proposed a more abstract differentiation between prayer types, resulting in three types; the upward, inward and outward prayers.

Although Ladd and Spilka’s approach surpasses consensus-based categorisations, their study too was based on a prestructured questionnaire. Moreover, none of these studies include the question what praying actually is. The definition of prayer is just taken for granted. However, in secularized settings where religious institutions weaken and shared definitions evaporate, like has happened in the Netherlands over the last decades (Becker & Vink, 1994; Dekker, De Hart, & Peters, 1997; Felling, Peters, & Scheepers, 1993), another approach is necessary. To investigate contemporary praying we should not rely on prestructured questionnaires but instead apply open-ended questions, like previously done by Janssen and colleagues (Janssen & Bänziger, 2003; Janssen, De Hart, & Den Draak, 1990; Janssen et al., 2000), who administered open-ended questions about praying to young people. Open-ended questions, contrary to prestructured questionnaires, provide the possibility to grasp more or even unknown aspects of contemporary praying practices. Particularly, in a secularizing society, answers to open-ended questions are needed to detect changing and emerging configurations of religiosity, hidden in personal feelings, acts, and opinions of people.

Our study continues with this methodological approach. The purposes are to acquire insight into the praying behavior of the Dutch by analyzing open-ended questions and to distinguish various types of prayer. Hence, the following research questions are addressed. How do the Dutch actually pray? Which varieties of prayer can adequately describe the contemporary praying practice of the Dutch? What is the significance of these distinctions and how are they related to varieties of prayers found in previous research?

## METHOD

### Data

The data for this study are from a (Dutch) nationwide survey, conducted in the year 2000 (Eisinga et al., 2002;  $N = 1,008$ ). This survey, which has been carried out every 5 years since 1979, contains questions on religious and secular attitudes and behaviors (Eisinga et al., 2002). The sample was composed by means of a two-stage random procedure. First, municipalities have randomly been selected, including a number of so-called self-weighted cities. Second, a random sample of respondents, between 18 and 70 years of age, was selected out of the registers of these municipalities. A number of 2,896 potential respondents were contacted, of which 1,008 agreed to cooperate—a response rate of 43.7%. This sample turned out to be representative of the Dutch population. The respondents were asked to fill out a questionnaire, containing, among other things, a number of open-ended questions regarding prayer. As much as 89% of the respondents answered the prayer questions.

### Procedure and Analyses

Six open-ended questions were administered: What is prayer, Where do you pray, When do you pray, How do you pray, When do you feel the need to pray, What do you hope to achieve with prayer? Praying frequency was measured with the question “Do you ever pray?” Sixty-two percentage of the 896 respondents reported to practice praying, varying from sometimes (33%), regularly (17%), to often (12%). Only 39% is member of a Christian church, and 20% attends regularly church services (Te Grotenhuis & Scheepers, 2001). This implies that people without a particular religious denomination also tend to pray.

The open-ended responses of the participants were analyzed with the computer program *TexTable*. *TexTable* was constructed for the content analysis of open-ended answers in large data sets (Janssen, 1990).<sup>1</sup> The content analysis results in qualitative data, which are subsequently ordered in a coherent set of categories. For example, all words related to speech (*talking, talk, speaking, saying, say, said, telling, etc.*) are ordered in the subcategory *Talking*, which is part of the category *Action* (see also Table 1). The whole takes the hierarchical shape of a tree diagram (Janssen, 1990; Mayring, 1988). During this procedure every step is recoded carefully to replicate the analyses and to handle the problem of the reliability. Finally, the qualitative data are recoded into quantitative data and subsequently transported to SPSS for further analyses.

---

<sup>1</sup>For more information about precise procedure of *TexTable*, see Janssen (1990). See also <http://www.texyz.com/texttable> where the current version can be downloaded and tested.

RESULTS

Structure of Praying

The six administered questions constitute a structure that can be considered as a definition of praying, as found by Janssen et al. (1990). They formulated praying as “the bodily and/or linguistic expression of a tripartite act of a need, action and effect, in a three-dimensional space, of direction, time, and place” (see Figure 1). This structure encompasses almost all aspect of the prayer ritual. Analyses of the six open-ended questions showed that almost half of the respondents (compare to the 62% who practice praying themselves) mention a prayer act, an effect of the prayers, a method, and times and places to pray. A need to pray was mentioned by 39%. Although we did not ask to whom or what the respondents pray, the findings revealed that 33% of the respondents mention a direction of praying, mostly on the question, What is praying? (Figure 1).

The Content of Praying Practices

Table 1 shows the results of the analyses of the six open-ended questions, according to the structural definition of praying.

Regarding the need to pray, it seems that in most cases people pray when they are confronted with concrete problems such as sickness, death, problems in relationships, or examinations. Less concrete situations, such as difficult moments, problems, and sadness, are also often stated reasons to pray. On the other hand, although less frequent, appear positive reasons to pray: to thank God or when someone is overwhelmed by the birth of a child (Table 1).

A large part of the Dutch population describes the act of praying in terms of talking, asking, or thanksgiving. A considerable amount of people, however, express their praying in rather abstract, cognitive terms, such as thinking, reflecting, and contemplating. Many people close their eyes and join hands when

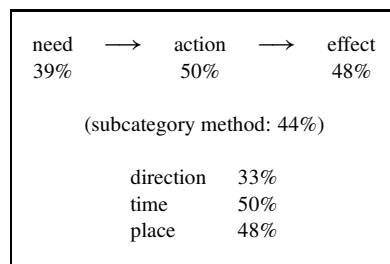


FIGURE 1 Structural definition of praying, based on six open-ended questions (*N* = 1,008).

TABLE 1  
The Content of Praying: Structural Elements and the Content Categories of  
Six Open-Ended Questions About Prayer

<i>Structural Elements</i>	<i>n (%)</i>	<i>Content Categories (%)</i>
Need	389 (39)	sickness (41), death (35), at difficult moments (20), problems (15), to thank God or happiness (11), for others (9), relational problems (8), birth (5), sadness (4), examinations (4)
Action	508 (50)	talking (42), asking (26), thinking (26), thanksgiving (19), reflection (14), contemplate (8)
Method	246 (44)	hands joined (14), eyes closed (13), in silence (11), lying (9), fixed formula (8), sitting (7), kneeling (4)
Effect	485 (48)	inner rest (28), help (20), insight (14), power (13), support (13), turn out to be all right (7), pour out one's heart (5), thanksgiving (5), relationship/contact with god (5), happiness (5), good health (4), forgiveness (4), remission (4), acceptance (4)
Direction	329 (33)	to God (63), in myself (29), something (12), higher power (11)
Place	485 (48)	at home (33), in bed (32), church (28), everywhere (21), before dinner (13), alone (8), countryside (4), at work (4), bicycle/car (4)
Time	501 (50)	evening/night (43), anytime (22), at diner (19), immediate cause (18), celebration (13), morning (10), fixed hours (4), by day (4), alone (3)

*Note.* The percentages of the structural elements are calculated in reference to the whole group ( $n = 1,008$ ; i.e., 39% of the respondents mentioned a need on one or more questions. The percentages for the content categories are calculated in reference to the number of respondents, who mentioned the structural aspect. Because each participant could mention several aspects, the total number may exceed 100%.

they pray. They pray in silence, either lying or sitting. Only a small minority of the Dutch pray on their knees.

As regards the effects of prayer, a sharp contrast with the need to pray can be observed. Even if the problems to pray about are real, such as sickness, people definitely do not pray for a concrete solution, provided by God. Named effects such as inner rest, power, support, and insight indicate that these aimed outcomes are subjective in nature, instead of objective interventions. A concrete effect, such as "better health," is mentioned by only a small minority. Some effects point to the traditional character of some prayers, such as a relationship with God, forgiveness, remission, and thanksgiving.

Regarding the direction of the prayers, Table 1 shows that of those people who mentioned a direction, a majority refers to God, which can be considered as an unobtrusive result because we did not ask the respondents to whom or what they pray. Most of the directional terms (God, myself, something, and higher power) are mentioned spontaneously on the question, What is prayer? The respondents have trouble defining a term like God; many can only say that

He is someone or something (Hutsebaut & Verhoeven, 1995; Janssen, de Hart, & Gerardts, 1994), His position in the structure of the prayer as the direction of the prayer seems undisputed, even in a secularized context. Regarding place and time, prayers are said at traditional, holy places and moments (in church, at dinner, at celebrations) and at all kinds of ordinary places and times, in particular at home or at night in bed.

### Varieties of Prayer: Four Dimensions

The aforementioned analysis resulted in 60 items of content categories. In the next step, the content categories with more or less the same meaning, such as at night and in bed, were combined, which resulted in 37 items. These were recoded in numeric data. Subsequently, a principal component factor analysis with Varimax rotation was conducted to distinguish types of prayer. A four-factorial solution was tested. All cross-loading items were deleted from the solution due to multiplicity (see the appendix). The remaining items provide a clear and concise picture of the four varieties of prayer. The explained variance is 47% (see Table 2).

The first factor represents what we call religious praying. A central element of this type of prayer is the relationship with God or to be in contact with God. The most frequently mentioned aspects reveal a typically traditional character, such as kneeling, asking for forgiveness, and before dinner. This prayer type is widespread and similar to the classic "prayer of communion" (Pratt, 1910/11). This type is also commonly found in other recent prayer studies. Although each study uses various labels, the religious prayer is comparable with, for example, the colloquial and ritual prayer types of Poloma and Gallup (1991) or the liturgical prayer of Spilka et al. (2003).

Factor 2 represents what we label as meditative praying. This type of prayer consists of cognitive acts, such as contemplation, meditation, and reflection. People do not talk to God or a higher being, but they perform this type of prayer in thought and are focused on themselves. The main purposes are to attain inner rest and insight. Comparing the meditative praying with the other varieties of prayer, it seems at first sight that this type corresponds to, for instance, the meditative type of Poloma and Gallup (1991), the contemplative prayer of Spilka et al. (2003), or the reception prayer of Laird et al. (2004). However, after a closer examination of the various items of which these prayer types consist, remarkable differences emerge. Whereas this type of meditative prayer can be characterized as a cognitive action, focused on oneself rather than on God, the "meditative types" of the other studies consist of items such as "feeling presence of God," "worshipping God" (Poloma & Gallup, 1991), "to be one with God," "seeking perfect harmony" (Spilka et al., 2003), and "passive awaits divine wisdom or guidance" (Laird et al., 2004). These items refer definitely to



TABLE 2  
Four-Factorial Solution of 22 Items, Items With Factor Loadings  $\geq .40$

	<i>Religious</i>	<i>Meditative</i>	<i>Impulsive</i>	<i>Petitionary</i>	<i>h<sup>2</sup></i>
1-kneeling	.78				.63
2-to God	.76				.63
3-forgiveness	.75				.61
4-before dinner	.66				.47
5-contact with God	.53				.34
6-insight		.68			.52
7-inner rest		.60			.42
8-good health		-.60			.41
9-considering/reflecting		.59			.58
10-in thought		.54			.37
11-turn out to be alright		-.51			.44
12-in myself		.43			.36
13-at difficult moments			.62		.60
14-sadness			.61		.43
15-something/high power			.56		.43
16-in bed/at night			.55		.40
17-in church			-.54		.42
18-pour out one's heart			.51		.40
19-asking				.84	.79
20-for others				.61	.59
21-thanksgiving				.52	.33
22-death				.41	.17
Explained variance	16%	11%	10%	10%	47%
Cronbach's $\alpha$	.87	.86	.75	.79	

*Note.* The omitted factor loadings are substantially lower than the loadings presented in table.  $n = 553$ . Extraction Method: Principal Component Analysis, on tetrachoric correlations. Rotation Method: Varimax with Kaiser Normalization. The appendix gives further details.

another type of praying and are not comparable with the items of the meditative prayer we found.

Factor 3 represents what we call impulsive praying. This praying style arises from direct psychological problems, such as sadness and difficult moments. It is characterized by pouring out one's heart to someone that is called a Higher Power or Something. It seems to point to a typically individualized prayer, said in bed, at moments of great distress. In some way it is closely related to the petitionary prayer. Both prayers arise from a problem, although the petitionary prayer contains classical or traditional elements, such as asking God for direct interventions. The impulsive prayer lacks these traditional characteristics; it is not directed to God, not asking for intervention, and not aimed at a direct effect. So far, no comparable equivalent to impulsive praying has been found among the other varieties of praying of previous mentioned empirical studies.

Factor 4 represents what we call petitionary praying, a classical way of praying. It is characterized as asking God for an intervention. Existential problems, such as death, are frequently mentioned motivations to pray. In addition, the interventions are often asked for other persons. The traditional feature of this prayer is also expressed by the item thanksgiving. The petitionary praying is the most general type of prayer found among all previous varieties (Hill & Hood, 1999; Laird et al., 2004; Poloma & Gallup, 1991; Spilka et al., 2003).

## DISCUSSION AND CONCLUSION

This contribution elaborated on the remarkable finding that, even in a highly secularized country such as the Netherlands, a majority of the inhabitants still practices praying (De Hart, 2006; Dekker et al., 2007). Our study provided a first step to unravel the reasons of this exceptional praying behavior. The purposes were to acquire insight into the actual praying behavior of the Dutch and to distinguish various types of prayer.

First, we focused on a structural definition of praying as a tripartite act of a need, action, and effect in a three-dimensional space of direction, time, and place. This structure provides a framework to describe the various aspects of which the prayer ritual exists.

Second, content analyses of the six open-ended questions about praying led to categories that provided a detailed description of the actual praying practice of the Dutch. Based on the content categories, we subsequently distinguished four varieties of prayer: religious praying, meditative praying, impulsive praying, and petitionary praying. Religious and petitionary praying are traditional in nature: The praying person strives for a relationship with God, or is looking for help by submitting existential problems to God. A second way of praying (meditative and impulsive praying) is rooted in the psyche of the individualized person, contemplating life and searching in oneself for insight and rest. Although these prayers vary from each other, it emerged that the structure of praying as a need, action, and effect with a direction, place, and time holds to each of the varieties.

Comparing the four types of praying with the varieties found by other scholars (i.e., Laird et al., 2004; Poloma & Gallup, 1991; Spilka et al., 2003), a sharp contrast between traditional and contemporary prayers emerged. On one hand, we found a remarkable correspondence between traditional prayer types; the religious prayer and the petitionary prayer are widely common to all studies. On the other hand, the meditative and impulsive prayers are less or not similar to other types of prayer previously described. Although some scholars distinguished contemplative and reception prayers, the content is rather different from the meditative prayer we found. The meditative and impulsive prayers seem to occur only in secularized or individualized societies, particularly where a traditional

view of a personal God is not widely acknowledged. These prayers seem to fit into individualized and noninstitutionalized forms of religiosity or spirituality.

We like to emphasise that next to the classic, theistic understanding of religion, a spiritual, philosophical, meditative way of being religious can be discerned. Today's prayer is a complex combination of meditative, impulsive, petitionary, and religious aspects that exceeds the boundaries of common religious practices. By studying open-ended questions on praying practices in a secular society, we implemented Wulff's (2001/02) plea to "place religion in the broadest possible framework" (p. 255). In modern society where processes of secularization and individualization are prominent, the study of prayer should be put on the research agenda to understand the religion of modern mankind. Our study with the Netherlands as a case study offers an outstanding starting point.

## REFERENCES

- Argyle, M., & Beit-Hallahmi, B. (1975). *The social psychology of religion*. London: Routledge & Kegan Paul.
- Becker, J., & Vink, R. (1994). *Secularisatie in Nederland 1966-1991* [Secularization in the Netherlands 1966-1991]. Rijswijk, the Netherlands: Sociaal en Cultureel Planbureau.
- De Hart, J. (2006). *Meer geloof, minder kerk* [More belief, less church]. Uitgave Sociaal en Cultureel Planbureau.
- Dekker, G., Bernts, T., & De Hart, J. (2007). *God in Nederland, 1996-2006* [God in the Netherlands, 1996-2006]. Kampen, the Netherlands: Ten Have BV.
- Dekker, G., De Hart, J., & Peters, J. (1997). *God in Nederland, 1966-1996* [God in the Netherlands, 1966-1996]. Amsterdam: Anthos.
- Di Nola, A. M. (1961). *The prayers of man: From primitive peoples to present times*. London: Heinemann.
- Eisinga, R., Coenders, M., Felling, A., Te Grotenhuis, M., Oomens, S., & Scheepers, P. (2002). *Religion in Dutch society 2000: Documentation of a national survey on religious and secular attitudes in 2000*. Amsterdam: Steinmetz Archive.
- Felling, A., Peters, J., & Scheepers, P. (1993). *Individual changes in the Netherlands 1985-1990: Documentation of a two wave panel research*. Amsterdam: Steinmetz Archive/SWIDOC.
- Francis, L. J., & Evans, T. E. (1995). The psychology of Christian prayer: A review of empirical research. *Religion*, 25, 371-388.
- Grotenhuis, M. te, & Scheepers, P. (2001). Churches in Dutch, causes of disaffiliation in the Netherlands 1937-1995. *Journal for the Scientific Study of Religion*, 40, 591-606.
- Halman, L. (2001). *The European values study: A third wave*. Tilburg, the Netherlands: WORC.
- Heiler, F. (1921). *Das Gebet: Eine religionsgeschichtliche und religionspsychologische Untersuchung*. München, Germany: Ernst Reinhardt.
- Hill, P., & Hood, R. W., Jr. (1999). *Measures of religiosity*. Birmingham, AL: Religious Education Press.
- Hutsebaut, D., & Verhoeven, D. (1995). Studying dimensions of God representations: Choosing closed or open-ended research questions. *The International Journal for the Psychology of Religion*, 5(1), 49-60.
- James, W. (1995). *De varianten van religieuze ervaring*. Utrecht, the Netherlands: Servire. (Original work published 1902)

- Janssen, J. (1990). *Tekst-tabel. Een gecomputeriseerde methode voor het analyseren van open vragen* [Text table. A computerized method to analyse open ended questions]. Nijmegen, the Netherlands.
- Janssen, J., & Bänziger, S. (2003). Praying as a universalising variable. *Archive for the Psychology of Religion*, 25, 100–112.
- Janssen, J., De Hart, J., & Den Draak, C. (1990). A content analysis of the praying practices of Dutch youth. *Journal for the Scientific Study of Religion*, 29, 99–107.
- Janssen, J., De Hart, J., & Gerardts, M. (1994). Images of God in adolescence. *The International Journal for the Psychology of Religion*, 4, 105–121.
- Janssen, J., Prins, M., Van der Lans, J., & Baerveldt, C. (2000). The structure and variety of prayer: An empirical study of Dutch youth. *Journal of Empirical Theology*, 13, 29–54.
- Ladd, K. L., & Spilka, B. (2002). Inward, outward, and upward: Cognitive aspects of prayer. *Journal for the Scientific Study of Religion*, 41(3), 475–484.
- Laird, S. P., Snyder, C. R., Rapoff, M. A., & Green, S. (2004). Measuring private prayer: Development, validation, and clinical application of the multidimensional prayer inventory. *The International Journal for the Psychology of Religion*, 14(4), 251–272.
- Mayring, P. (1988). *Qualitative Inhaltsanalyse: Grundlage und Techniken*. Weinheim, Germany: Deutscher Studien Verlag.
- Poloma, M. M., & Gallup, G. H., Jr. (1991). *Varieties of prayer: A survey report*. Philadelphia: Trinity Press International.
- Pratt, J. B. (1910/11). An empirical study of prayer. *American Journal of Religious Psychology and Education*, 4, 48–67.
- Selbie, W. (1924). *The psychology of religion*. London: Oxford University Press.
- Spilka, B., Hood, R. W., Jr., Hunsberger, B., & Gorsuch, R. L. (2003). *The psychology of religion: An empirical approach* (3rd ed.). New York: Guilford.
- Wulff, D. M. (2001/02). The psychology of religion and the problems of apologetics. *Temenos*, 37/38, 241–261.

## APPENDIX

Factor analyses are based on tetrachorical correlations because all variables are dichotomous. The scree plot of the factor analyses shows a break between the fourth and fifth factor. On these empirical grounds, we decided that the factor analyses could be fixed on four factors.

The 60 content categories which are the basis for the factor analyses were reduced to 37 items in the first step and in the second step to 22 items. In the first step of this procedure, categories with the same meaning were combined into one category. This led to the following categories: before dinner (containing before dinner and at dinner), contemplation/reflection (contemplation and reflection), something/higher power (something and higher power), in bed/at night (in bed, and evening/night), in church (church, and celebration), thanksgiving (to thank (need), thanksgiving (as action), and thanksgiving (as effect). This resulted in 37 items. In the second step (with the remaining 37 items), items that loaded (substantially) lower than .40, and higher than .40 on two factors were excluded. This procedure ended in 22 items that load only on one factor with factor loadings above .40.