# THE UNIVERSITY OF WARWICK

## **Original citation:**

Astley, J., et al. (2012). Assessing attitude towards religion : the Astley–Francis Scale of attitude towards theistic faith. British Journal of Religious Education, 34(2), pp. 183-193.

## Permanent WRAP url:

http://wrap.warwick.ac.uk/45116/

## Copyright and reuse:

The Warwick Research Archive Portal (WRAP) makes the work of researchers of the University of Warwick available open access under the following conditions. Copyright © and all moral rights to the version of the paper presented here belong to the individual author(s) and/or other copyright owners. To the extent reasonable and practicable the material made available in WRAP has been checked for eligibility before being made available.

Copies of full items can be used for personal research or study, educational, or not-forprofit purposes without prior permission or charge. Provided that the authors, title and full bibliographic details are credited, a hyperlink and/or URL is given for the original metadata page and the content is not changed in any way.

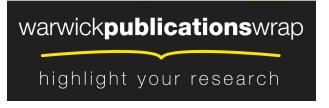
## Publisher's statement:

This is an Author's Accepted Manuscript of an article published in Astley, J., et al. (2012). Assessing attitude towards religion : the Astley–Francis Scale of attitude towards theistic faith as published in the British Journal of Religious Education 19 Oct 2011 copyright Taylor & Francis, available online at: http://www.tandfonline.com/10.1080/01416200.2011.614735

## A note on versions:

The version presented here may differ from the published version or, version of record, if you wish to cite this item you are advised to consult the publisher's version. Please see the 'permanent WRAP url' above for details on accessing the published version and note that access may require a subscription.

For more information, please contact the WRAP Team at: wrap@warwick.ac.uk



http://go.warwick.ac.uk/lib-publications

Assessing attitude toward religion: the Astley-Francis Scale of Attitude toward Theistic Faith.

## Jeff Astley

## University of Durham, UK

Leslie J. Francis\*

University of Warwick, UK

Mandy Robbins

Glyndŵr University, UK

Author note: \*Corresponding author: Leslie J Francis Warwick Religions & Education Research Unit Institute of Education The University of Warwick Coventry CV4 7AL United Kingdom Tel: +44 (0)24 7652 2539 Fax: +44 (0)24 7657 2638 Email: leslie.francis@warwick.ac.uk

## Summary

This study builds on the research tradition modelled by the Francis Scale of Attitude toward Christianity, the Katz-Francis Scale of Attitude toward Judaism, the Sahin-Francis Scale of Attitude toward Islam and the Santosh-Francis Scale of Attitude toward Hinduism to propose a generic instrument concerned with attitudes towards theistic faith. The scale properties of this new instrument, established among a sample of 284 16- to 18-year-old students (200 female and 84 male), commend it for use in future research.

#### Introduction

Working in the 1970s, Francis (1976) undertook a detailed assessment of extant research in the field of the empirical psychology of religious development for the practice of religious education. Two main conclusions emerged from this research. The first conclusion was that, by the mid-1970s, a growing body of empirically-based research was beginning to become available that was capable of influencing practical developments in religious education. The second conclusion was that the usefulness of the growing body of empiricallybased research was limited by the lack of collaboration between individual researchers. Because different researchers were employing different understandings of religion and were operationalising their understandings of religion through a range of different measures, integration of their findings remained somewhat problematic. Working within an established scientific framework, Francis argued that the way forward in this field would be advanced and accelerated by a semi-coordinated series of studies that agreed on a common measure and accepted the benefit of systematic replication of studies employing such a common measure. In a paper published in British Journal of Religious education under the title 'Measurement reapplied', Francis (1978) advanced the view that the attitudinal dimension of religion offered a particularly fruitful basis for coordinating empirical enquiry into the correlates, antecedents, and consequences of religiosity across the life span. In that paper, Francis introduced what has subsequently become known as the Francis Scale of Attitude toward Christianity, and he invited colleagues to join with him in conducting and drawing together a series of empirical studies by use of that common instrument.

The attitudinal dimension appeared attractive to Francis in the 1970s and continues to appear attractive for four main reasons. First, at a conceptual level, social psychologists have developed a sophisticated and well-established understanding of attitude as a deep-seated and relatively stable and enduring covert predisposition, in contrast with more volatile and surface behaviours and opinions. To assess attitude toward religion is to get close to the heart of religion in an individual's life. Second, attitudes provide a purer measure of religion than either belief or practice. The affective dimension with which attitudes are concerned is able to transcend the divisions between denominational perspectives while beliefs tend to polarise such divisions. The attitudinal dimension of religion, being deep seated, is less likely to be distorted by personal and contextual factors, while practice tends to be subject to all kinds of personal and social constraints. Third, at an operational level, social psychologists have developed a range of sophisticated and well-established techniques for assessing and scaling attitudes, including the pioneering work of Thurstone (1928), Likert (1932), Guttman (1944), and Osgood, Suci, and Tannenbaum (1957). The social scientific study of religion is able to build on these foundations. Fourth, the attitudinal dimension of religion can be accessed by instruments which can function in a comparatively stable manner over a wide age range. While the sophistication with which beliefs are formulated and tested clearly develops over the life span (see, for example, Fowler, 1981), attitudinal statements concerned with positive and negative affect can be formulated in ways which are equally acceptable during childhood, adolescence and adulthood (Francis, 1989; Francis & Stubbs, 1987).

Against this background, Francis (1978) proposed a 24-item Likert scale, now known as the Francis Scale of Attitude toward Christianity, and designed for application in Christian and post-Christian cultural settings. This instrument contained both negative and positive items concerned with affective responses to five components of the Christian faith accessible to and recognised by both children and adults, namely God, Jesus, Bible, prayer and church. The English language form of this instrument has been tested in a number of contexts, including Australia and Canada (Francis, Lewis, Philipchalk, Brown, & Lester, 1995), England (Lewis, Cruise, & Lattimer, 2007), Kenya (Fulljames & Francis, 1987), Nigeria (Francis & McCarron, 1989), Northern Ireland (Lewis & Maltby, 1997), Republic of Ireland

(Maltby, 1994), Scotland (Gibson & Francis, 1989), South Africa (Francis, Kerr, & Lewis, 2005), and the United States of America (Lewis & Maltby, 1995). Although scales of around 24 items are not generally problematic to administer, they can prove to be cumbersome when time is particularly restricted or when there is a large number of other issues to include within one questionnaire survey. It is for this reason that in addition to the full 24-item form of the Francis Scale of Attitude toward Christianity, a seven-item short form has been developed and tested among primary school pupils (Francis, 1992), secondary school pupils (Francis, Greer, & Gibson, 1991) and adults (Francis, 1993; Francis, Lewis, Philipchalk, Lester, & Brown, 1995; Maltby & Lewis, 1997; Lewis, Shevlin, Lloyd, & Adamson, 1998; Adamson, Shevlin, Lloyd, & Lewis, 2000; Lewis, Cruise, & McGuckin, 2005).

The Francis scale of Attitude toward Christianity has also been translated into other languages, recognising that integration of cross-cultural quantitative studies in the psychology of religion has been hampered by the lack of common instrumentation. Examples are provided by editions in Arabic (Munayer, 2000), Czech (Francis, Quesnell, & Lewis, 2010) Chinese (Francis, Lewis, & Ng, 2002), Dutch (Francis & Hermans, 2000), French (Lewis & Francis, 2003), German (Francis & Kwiran, 1999; Francis, Ziebertz, & Lewis, 2002), Greek (Youtika, Joseph, & Diduca, 1999), Norwegian (Francis & Enger, 2002), Portuguese (Ferreira & Neto, 2002), Romanian (Francis, Ispas, Robbins, Ilie, & Iliescu, 2009), Slovenian (Flere, Klanjsek, Francis, & Robbins, 2008), Spanish (Campo-Arias, Oviedo, Dtaz, & Cogollo, 2006), Swedish (Eek, 2001), and Welsh (Evans & Francis, 1996; Francis & Thomas, 2003). The short form is also available in Chinese (Lewis, Francis, & Ng, 2003), Dutch (Lewis & Hermans, 2003), French (Lewis & Francis, 2004), Norwegian (Lewis, Francis, & Enger, 2003), and Welsh (Lewis & Francis, 2002).

By the mid 1990s over one hundred independent studies had employed this scale to examine a wide range of correlates of religiosity during childhood, adolescence and

adulthood. These studies were summarised and synthesised by Kay and Francis (1996). Since the 1990s the scale has been employed in further studies exploring the correlates of religiosity, including: abortion attitudes (Fawcett, Andrews, & Lester, 2000); alcohol attitudes (Francis, Fearn, & Lewis, 2005), altruism (Eckert & Lester, 1997); conservatism (Lewis & Maltby, 2000); dissociation (Dorahy & Lewis, 2001); dogmatism (Francis, 2001; Francis & Robbins, 2003); gender orientation (Francis & Wilcox, 1996, 1998; Francis, 2005); general health (Francis, Robbins, Lewis, Quigley, & Wheeler, 2004); intelligence (Francis, 1998); obsessionality (Lewis, 1996; Maltby, 1997); paranormal belief (Williams, Francis, & Robbins, 2006); prosocial values (Schludermann, Schludermann, & Huynh, 2000); psychological adjustment (Schludermann, Schludermann, Needham, & Mulenga, 2001); psychological health (Francis & Burton, 2007; Francis, Robbins, ap Sion, Lewis, & Barnes, 2007); psychological wellbeing (Francis, Hills, Schludermann, & Schludemann, 2008); purpose in life (French & Joseph, 1999); and science attitudes (Francis & Greer, 2001).

In order to test whether the growing body of evidence regarding the correlates, antecedents and consequences of attitudes toward religion (established in a Christian context by means of the Francis Scale of Attitude toward Christianity) also held true in a Jewish context, Francis and Katz (2007) developed a comparable instrument, the Katz-Francis Scale of Attitude toward Judaism. In order to achieve a proper comparability between the two instruments the attempt was made to translate each of the original 24 items in a way appropriate for a Hebrew speaking Jew living in Israel. The psychometric properties of the instrument were assessed on a sample of 618 Hebrew-speaking undergraduate students attending Bar-Ilan University.

The second development was the Sahin-Francis Scale of Attitude toward Islam (Sahin & Francis, 2002). The items of the Francis Scale of Attitude toward Christianity were carefully scrutinised and debated by several Muslim scholars of Islam until agreement was

reached on 23 Islam-related items which mapped closely onto the area assessed by the parent instrument. The psychometric properties of the new instrument of the Sahin-Francis Scale of Attitude toward Islam were assessed on 381 Muslim adolescents in England. Subsequently the instrument was tested among a sample of 1,199 Muslim adolescents in Kuwait (Francis, Sahin, & Al-Ansari, 2006; Francis, Sahin, & Al-Failakawi, 2008).

The third development was the Santosh-Francis Scale of Attitude toward Hinduism (Francis, Santosh, Robbins, & Vij, 2008). Scholars familiar with the study of Hinduism debated the items presented in the Francis Scale of Attitude toward Christianity and suggested 19 equivalent translations into a Hindu context. The psychometric properties of the instrument were assessed on a sample of 330 individuals between the ages of 12 and 35 attending a Hindu youth festival in England. Subsequently the instrument was tested among a sample of 100 Hindu affiliates from the Bunt caste in the South India state of Karnataka (Tiliopoulos, Francis, & Slattery, 2010).

As a further development in this sequence of attitudinal measures, the aim of the present study is to develop a new short-measure that is accessible to the theistic traditions. To achieve this end, the seven items of the short form of the Francis Scale of Attitude toward Christianity were modified in order to become more widely inclusive of the theistic traditions. Specifically items concerned with Jesus were re-phrased to speak of God; items concerned with church were rephrased to speak of places of worship. It is these reformulated items that were tested among a sample of young people.

## Method

## Instrument

*Attitude* Adapted from the short-form of the Francis Scale of Attitude toward Christianity (Francis, Lewis, Philiphchalk, Lester, & Brown, 1995), the Astley-Francis Scale of Attitude toward Theistic Faith proposes seven items concerned with affective responses to God, places

of worship, and prayer. Each item is assessed on a five-point Likert scale: agree strongly, agree, not certain, disagree, and disagree strongly.

*Public worship* Frequency of attendance at places of public worship was assessed on a fivepoint scale: weekly, at least once a month, sometimes, once or twice a year, and never. *Personal prayer* Frequency of personal prayer was assessed on a five-point scale: daily, at least once a week, sometimes, once or twice a year, and never.

#### Sample

A sample of 284 16- to 18-year-old students (200 female and 84 male), attending a sixth-form study day convened by the North of England Institute for Christian Education, completed the *Science, Religion and Life Questionnaire*. In terms of religious affiliation, 22% identified as Roman Catholic, 12% as Church of England, and 19% as belonging to other Christian denominations. Just one respondent identified as Buddhist, and the remaining 47% claimed association with no religious group. In terms of public religious practice, 19% reported that they attended a place of worship weekly and a further 5% attended at least once a month; 40% attended less frequently (but at least once a year), and the remaining 36% never attended. In terms of private religious practice, 16% reported that they prayed daily and a further 11% prayed at least once a month; 34% prayed less frequently but at least once a year, and the remaining 39% never prayed.

## Data analysis

The data were analysed by the SPSS statistical package, using the the frequency, reliability, factor, and correlation routines.

## Results

Table 1 presents the scale properties of the Astley-Francis Scale of Attitude toward Theistic Faith, in terms of the item rest-of scale correlations (column 1), the loadings on the first factor of the unrotated solution proposed by principal components analysis (column 2), and the item endorsement in terms of the sum of the agree and agree strongly responses (column 3). The seven items generated an alpha coefficient (Cronbach, 1951) of .95. The first factor accounted for 77% of the variance. These statistics demonstrate a short scale of high internal consistency reliability.

-Insert table one about here-

The construct validity of the instruments following in the tradition of the Francis Scale of Attitude toward Christianity has generally been demonstrated in the initial stages by examining the association between the attitude scores and measures of personal and public religion. In the case of the present instrument, there were highly significant Pearson product moment correlations between scores recorded on the Astley-Francis Scale of Attitude toward Theistic Faith and both personal prayer (r = .81, p < .001) and attendance at public worship (r = .69, p < .001).

## Conclusion

The present study has been set within a research tradition that has contributed significantly since the late 1970s to establishing a secure empirical psychology of religious development relevant for the practice of religious education. This research tradition continues to invite colleagues to contribute to this growing body of empirically-based knowledge by including in their research an appropriate instrument from the Francis family of attitude scales. The development of scales specifically designed for application in Christian, Jewish, and Islamic contexts has enabled undergraduate and postgraduate students to contribute their own research to this body of knowledge, as well as established scholars working within their different faith contexts. A major limitation with these instruments (shaped in Christian, Jewish and Islamic contexts), however, is found by researchers working in multi-faith classrooms, where young Christians, Jews and Muslims may be studying side-by-side, together with young people of no religious affiliation, as is so often the case in much of

Britain today. The present study has set out to address this problem by preparing and testing a modification of the short form of the Francis Scale of Attitude toward Christianity appropriate for application across the theistic traditions. The findings from this initial study support the internal consistency reliability and construct validity of this new instrument, the Astley-Francis Scale of Attitude toward Theistic Faith, and commend the instrument for further use. Returning to the invitation issued by Francis (1978) in the paper published in *British Journal of Religious Education* under the title 'Measurement-reapplied', the present paper offers to colleagues and students in religious education a more flexible choice of instruments, through which they can continue to explore and document the correlates, consequences and antecedents of individual differences in attitude toward religion.

It is important to recognise that this initial study is limited by the nature of the sample being restricted to one age group (16- to 18-year-olds), to one cultural context (pupils attending sixth-form classes in the north east of England), and to a predominantly Christian and post-Christian background. Such limitations need to be appropriately addressed by wellplaced studies designed to replicate and to extend this initial study.

#### References

- Adamson, G., Shevlin, M., Lloyd, N. S. V., & Lewis, C. A. (2000). An integrated approach for assessing reliability and validity: An application of structural equation modelling to the measurement of religiosity. *Personality and Individual Differences*, 29, 971-979.
- Campo-Arias, A., Oviedo, H. C., Dtaz, C. F., & Cogollo, Z. (2006). Internal consistency of a Spanish translation of the Francis Scale of Attitude toward Christianity short form. *Psychological Reports*, 99, 1008-1010.
- Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests, *Psychometrika*, *16*, 297-334.
- Dorahy, M. J., & Lewis, C. A. (2001). The relationship between dissociation and religiosity: An empirical evaluation of Schumaker's theory. *Journal for the Scientific Study of Religion*, 40, 317-324.
- Eckert, R. M., & Lester, D. (1997). Altruism and religiosity. Psychological Reports, 81, 562.
- Eek, J. (2001). Religious facilitation through intense liturgical participation: A quasiexperimental study of Swedish pilgrims to Taizé. Lund: University of Lund Studies in Psychology of Religion.
- Evans, T. E., & Francis, L. J. (1996). Measuring attitude toward Christianity through the medium of Welsh. In L. J. Francis, W. K. Kay, & W. S. Campbell (Eds.), *Research in religious education* (pp. 279-294). Leominster: Fowler Wright Books.
- Fawcett, J., Andrews, V., & Lester D. (2000). Religiosity and attitudes about abortion. *Psychological Reports*, 87, 980.
- Ferreira, V., & Neto, F. (2002). Psychometric properties of the Francis Scale of Attitude toward Christianity among Portugese university students. *Psychological Reports*, 91, 995-998.

- Flere, S., Klanjsek, R., Francis, L. J., & Robbins, M. (2008). The psychometric properties of the Slovenian translation of the Francis scale of Attitude toward Christianity in a study among Roman Catholic undergraduate students. *Journal of Beliefs and Values, 29*, 313-319.
- Fowler, J. W. (1981). *Stages of faith: The psychology of human development and the quest for meaning*. San Francisco: Harper and Row.
- Francis, L. J. (1976). An enquiry into the concept 'readiness for religion', Unpublished Ph.D. dissertation. University of Cambridge.
- Francis, L. J. (1978). Measurement reapplied: Research into the child's attitude towards religion. *British Journal of Religious Education*, *1*, 45-51.
- Francis, L. J. (1989). Measuring attitude towards Christianity during childhood and adolescence. *Personality and Individual Differences*, *10*, 695-698.
- Francis, L.J. (1992). Reliability and validity of a short measure of attitude towards Christianity among nine to eleven year old pupils in England. *Collected Original Resources in Education*, 16, 1, fiche 3, A02.
- Francis, L. J. (1993). Reliability and validity of a short scale of attitude towards Christianity among adults. *Psychological Reports*, 72, 615-618.
- Francis, L. J. (1998). The relationship between intelligence and religiosity among 15 to 16 year olds. *Mental Health, Religion and Culture, 1*, 185-196.
- Francis, L. J. (2001). Christianity and dogmatism revisited: A study among fifteen and sixteen year olds in the UK. *Religious Education*, *96*, 211-226.
- Francis, L. J. (2005). Gender role orientation and attitude toward Christianity: A study among older men and women in the United Kingdom. *Journal of Psychology and Theology*, *33*, 179-186.
- Francis, L.J., & Burton, L. (2007). The relationship between psychological health and attitude

toward Christianity among 11 to 15 year old pupils in England. *Journal of Research in Christian Education, 16,* 83-102.

- Francis, L.J., & Enger, T. (2002). The Norwegian translation of the Francis Scale of Attitude toward Christianity. *Scandinavian Journal of Psychology*, 43, 363-367.
- Francis, L. J., Fearn, M., & Lewis, C. A. (2005). The impact of personality and religion on attitudes toward alcohol among 16-18 year olds in Northern Ireland. *Journal of Religion and Health*, 44, 267-289.
- Francis, L. J., & Greer, J. E. (2001). Shaping adolescents' attitudes toward science and religion in Northern Ireland: The role of scientism, creationism and denominational schools. *Research in Science and Technological Education*, 19, 39-53.
- Francis, L. J., Greer, J. E., & Gibson, H. M. (1991). Reliability and validity of a short measure of attitude towards Christianity among secondary school pupils in England, Scotland and Northern Ireland. *Collected Original Resources in Education*, 15(3), fiche 2, G09.
- Francis, L. J., & Hermans, C. A. M. (2000). Internal consistency reliability and construct validity of the Dutch translation of the Francis scale of Attitude toward Christianity among adolescents. *Psychological Reports*, 86, 301-307.
- Francis, L. J., Hills, P. R., Schludermann, E., & Schludermann, S. (2008). Religion, psychological well-being, and personality: A study among undergraduate students in Canada. *Research in the Social Scientific Study of Religion*. 19, 1-16.
- Francis, L. J., Ispas, D., Robbins, M., Ilie, A., & Iliescu, D. (2009). The Romanian translation of the Francis Scale of Attitude toward Christianity: Internal consistency reliability, re-test reliability, and construct validity among undergraduate students within a Greek Orthodox culture. *Pastoral Psychology*, 58, 49-54.

- Francis, L. J., & Katz, Y. J. (2007). Measuring attitude toward Judaism: The internal consistency reliability of the Katz-Francis Scale of Attitude toward Judaism. *Mental Health, Religion and Culture, 10*, 309-324.
- Francis, L. J., Kerr, S., & Lewis, C. A. (2005). Assessing attitude toward Christianity among adolescents in South Africa: The Francis scale. *South African Journal of Psychology*, 35, 147-155.
- Francis, L. J., & Kwiran, M. (1999). Werthaltungen (einstellungen) gegenüber dem christentum bei deutschen heranwachsenden: Die francis-skala. *Braunschweiger Beiträge*, 89(3), 50-54.
- Francis, L. J., Lewis, C. A., & Ng, P. (2002). Assessing attitude toward Christianity among Chinese speaking adolescents in Hong Kong: The Francis scale. *North American Journal of Psychology*, 4, 431-440.
- Francis, L. J., Lewis, J. M., Philipchalk, R., Brown, L. B., & Lester, D. (1995). The internal consistency reliability and construct validity of the Francis scale of attitude towards Christianity (adult) among undergraduate students in the UK, USA, Australia and Canada. *Personality and Individual Differences*, 19, 949-953.
- Francis, L. J., Lewis, J. M., Philipchalk, R., Lester, D., & Brown, L. B. (1995). Reliability and validity of a short scale of attitude toward Christianity among students in the UK, USA, Australia and Canada. *Psychological Reports*, 77, 431-434.
- Francis, L. J., & McCarron, M. M. (1989). The measurement of attitudes towards Christianity among Nigerian secondary school students. *Journal of Social Psychology*, 129, 569-571.
- Francis, L.J., Quesnell, M., & Lewis, C.A. (2010). Assessing attitude toward Christianity among adolescents in the Czech Republic: The Francis Scale. *Irish Journal of Psychology*, 31, 125-134.

- Francis, L. J., & Robbins, M. (2003). Christianity and dogmatism among undergraduate students. *Journal of Beliefs and Values*, 24, 89-95.
- Francis, L. J., Robbins, M., ap Sion, T., Lewis, C. A., & Barnes, L.P. (2007). Psychological health and attitude toward Christianity among Protestant and Catholic sixth-form pupils in Northern Ireland. *Pastoral Psychology*, 56, 157-164.
- Francis, L. J., Robbins, M., Lewis, C. A., Quigley, C. F., & Wheeler, C. (2004). Religiosity and general health among undergraduate students: A response to O'Connor, Cobb and O'Connor. *Personality and Individual Differences*, 37, 485-494.
- Francis, L. J., Sahin, A., & Al-Ansari, E. (2006). The psychometric properties of the Sahin-Francis Scale of Attitude toward Islam among young adults in Kuwait. *Muslim Educational Quarterly*, 23, 69-82.
- Francis, L. J., Sahin, A., & Al-Failakawi, F. (2008). Psychometric properties of two Islamic measures among young adults in Kuwait: The Sahin-Francis Scale of Attitude toward Islam and the Sahin Index of Islamic Moral Values. *Journal of Muslim Mental Health, 3*, 9-24.
- Francis, L. J., Santosh, R., Robbins, M., & Vij, S. (2008). Assessing attitude toward
  Hinduism: The Santosh-Francis Scale. *Mental Health, Religion and Culture*, 11, 609-621
- Francis, L. J., & Stubbs, M. T. (1987). Measuring attitudes towards Christianity: From childhood to adulthood. *Personality and Individual Differences*, 8, 741-743.
- Francis, L. J., & Thomas, E. M. (2003). The reliability and validity of the Francis Scale of Attitude toward Christianity among Welsh speaking 9-11 year olds. *The Psychologist in Wales*, 16, 9-14.
- Francis, L. J., & Wilcox, C. (1996). Religion and gender orientation. *Personality and Individual Differences*, 20, 119-121.

- Francis, L. J., & Wilcox, C. (1998). Religiosity and femininity: Do women really hold a more positive attitude toward Christianity? *Journal for the Scientific Study of Religion*, 37, 462-469.
- Francis, L. J., Ziebertz, H.-G., & Lewis, C. A. (2002). The psychometric properties of the Francis Scale of Attitude toward Christianity among German students. *Panorama*, 14, 153-162.
- French, S., & Joseph, S. (1999). Religiosity and its association with happiness, purpose in life, and self-actualisation. *Mental Health, Religion and Culture, 2*, 117-120.
- Fulljames, P., & Francis, L. J. (1987). The measurement of attitudes toward Christianity among Kenyan secondary school students. *Journal of Social Psychology*, *127*, 407-409.
- Gibson, H. M., & Francis, L. J. (1989). Measuring attitudes towards Christianity among 11- to16- year old pupils in Catholic schools in Scotland. *Educational Research*, *31*, 65-69.
- Guttman, L. (1944). A basis for scaling qualitative data. *American Sociological Review*, 9, 139-150.
- Kay, W. K., & Francis, L. J. (1996). Drift from the churches: Attitude toward Christianity during childhood and adolescence. Cardiff: University of Wales Press.
- Lewis, C. A. (1996). Religiosity and obsessionality. In L. J. Francis, W. K. Kay and W. S. Campbell (Eds.), *Research in religious education* (pp. 219-227). Leominster: Gracewing.
- Lewis, C. A., Cruise, S. M., & Lattimer, B. (2007). Temporal stability of the Francis Scale of Attitude toward Christianity short-form among 10- to 12-year-old English children: Test-retest data over 15 weeks. *Archive for the Psychology of Religion*, 29, 259-267.
- Lewis, C. A., Cruise, S. M., & McGuckin, C. (2005). Temporal stability of the Francis Scale of Attitude toward Christianity short-form: Test-retest data over one week. *Psychological Reports*, 96, 266-268.

- Lewis, C. A., & Francis, L. J. (2002). Reliability and validity of a Welsh translation of a short scale of attitude toward Christianity among 8-15 year olds. *Irish Journal of Psychology*, 23, 101-108.
- Lewis, C. A., & Francis, L. J. (2003). Evaluer l'attitude d'étudiantes universitaires françaises à l'égard du Christianisme: L'Echelle de Francis. *Sciences Pastorals*, *22*, 179-190.
- Lewis, C. A., & Francis, L. J. (2004). Reliability and validity of a French translation of a short scale of attitude toward Christianity. *Pastoral Psychology*, *52*, 459-464.
- Lewis, C. A., Francis, L. J., & Enger, T. (2003). Reliability and validity of a Norwegian translation of a short scale of attitude toward Christianity. *Individual Differences Research*, *1*, 230-235.
- Lewis, C. A., Francis, L. J., & Ng, P. (2003). Reliability and validity of a Chinese translation of a short scale of attitude toward Christianity. *Journal of Personality and Clinical Studies*, 19, 195-200.
- Lewis, C. A., & Hermans, C. A. M. (2003). Reliability and validity of a Dutch translation of a short scale of attitude toward Christianity. *Journal of Beliefs and Values*, *24*, 97-100.
- Lewis, C. A., & Maltby, J. (1995). The reliability and validity of the Francis scale of attitude towards Christianity among US adults. *Psychological Reports*, *76*, 1243-1247.
- Lewis, C. A., & Maltby, J. (1997). Reliability and validity of the Francis Scale of Attitude toward Christianity (adult) among Northern Irish university students. *Irish Journal of Psychology*, 18, 349-354.
- Lewis, C. A., & Maltby, J. (2000). Conservatism and attitude toward Christianity. *Personality* and Individual Differences, 29, 793-798.
- Lewis, C. A., Shevlin, M., Lloyd, N. S. V., & Adamson, G. (1998). The Francis Scale of Attitude toward Christianity (short scale): Exploratory and confirmatory factor analysis among English students. *Journal of Social Behaviour and Personality*, 13, 167-175.

- Likert, R. (1932). A technique for the measurement of attitudes. *Archives of Psychology*, 140, 1-55.
- Maltby, J. (1994). The reliability and validity of the Francis scale of attitude towards Christianity among Republic of Ireland adults. *Irish Journal of Psychology*, *15*, 595-598.
- Maltby, J. (1997). Obsessional personality traits: The association with attitudes toward Christianity and religious puritanism. *Journal of Psychology*, *131*, 675-677.
- Maltby, J., & Lewis, C. A. (1997). The reliability and validity of a short scale of attitude toward Christianity among USA, English, Republic of Ireland and Northern Ireland adults. *Personality and Individual Differences*, 22, 649-654.
- Munayer, S. J. (2000). The ethic identity of Palestinian Arab Christian adolescents in Israel.Unpublished doctoral dissertation, University of Wales (Oxford Centre for Mission Studies).
- Osgood, C. E., Suci, G. J., & Tannenbaum, P. H. (1957). *The measurement of meaning*. Urbana, Illinois: University of Illinois Press.
- Sahin, A., & Francis, L. J. (2002). Assessing attitude toward Islam among Muslim adolescents: The psychometric properties of the Sahin-Francis scale. *Muslim Education Quarterly*, 19(4), 35-47.
- Schludermann, E. H., Schludermann, S. M., & Huynh, C. L. (2000). Religiosity, prosocial values, and adjustment among students in Catholic high schools in Canada. *Journal of Beliefs and Values*, 21, 99-115.
- Schludermann, E. H., Schludermann, S. M., Needham, D., & Mulenga, M. (2001). Fear of rejection versus religious commitment as predictors of adjustment among Reformed and Evangelical college students in Canada. *Journal of Beliefs and Values*, 22, 209-224.

- Thurstone, L. L. (1928). Attitudes can be measured. *American Journal of Sociology*, *33*, 529-554.
- Tiliopoulos, N., Francis, L. J., & Slattery, M. (2010). The internal consistency reliability of the Santosh-Francis Scale of Attitude toward Hinduism among Bunts in South India. *North American Journal of Psychology*, 12, 185-190.
- Williams, E., Francis, L. J., & Robbins, M. (2006). Attitude toward Christianity and paranormal belief among 13- to 16-year-old students. *Psychological Reports*, *99*, 266.
- Youtika, A., Joseph, S., & Diduca, D. (1999). Personality and religiosity in a Greek Christian Orthodox sample. *Mental Health, Religion and Culture*, 2, 71-74.

# Table 1

# Scale of Attitude toward Theistic Faith: scale properties

	item r	factor loading	agree %
I find it hard to believe in God*	0.77	0.83	38
Prayer helps me a lot	0.86	0.90	36
I think going to a place of worship is a waste of my time*	0.63	0.71	22
I know that God is very close to me	0.84	0.89	32
God helps me to lead a better life	0.87	0.91	35
I know that God helps me	0.90	0.93	36
God means a lot to me	0.89	0.93	39

Note \* these items are reverse coded.