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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

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Abstract

Given the importance of the development of reliable and valid measures in the psychology of religion and recent growth of interest in developing empirical studies within an Islamic context, the present study discusses the properties of two specially designed instruments: the Sahin-Francis Scale of Attitude toward Islam and the Sahin Index of Islamic Moral Values. Data were provided by a sample of 1,199 students, selected from secondary schools in six educational districts in Kuwait. The sample comprised 603 males and 596 females; 812 were 17 years of age and 387 were 18 years of age. The data support the internal consistency reliability and construct validity of both instruments and commend them for further research concerned with establishing the correlates of religiosity among students in the Islamic context of Kuwait.

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

Measurement played a crucial role in the development of an empirically-based psychology of religion during the second half of the twentieth century, as so clearly revealed by comparing the two classic reviews published at the end of the 1950s by Argyle (1958) and at the beginning of the twenty-first century by Spilka, Hood, Hunsberger, and Gorsuch (2003). Assessment of the review of the range of measures available in the field by Hill and Hood (1999) draws attention, however, to two crucial weaknesses in the field of measurement in the psychology of religion. The first weakness concerns the multiplicity of measures which have been employed in only a small number of studies. Since operationalisation determines the precise nature of the construct being assessed, the integration of findings from studies employing different measures remains problematic. The second weakness concerns the concentration on developing measures largely within the Christian tradition. Since there are considerable differences between the major world faiths, as well as significant similarities, it remains problematic trying to base an empirical psychology of religion on data so heavily derived from within a Christian (or post-Christian) framework. Both of these problems have been recognised and, to some extent, addressed by Francis and his associates.

The first problem was recognised by Francis (1978a, 1978b) in two early papers in which he introduced the Francis Scale of Attitude toward Christianity and invited colleagues to collaborate with him in building up a series of interrelated studies concerned with mapping the correlates, antecedents and consequences of individual differences in religiosity in such a way that the findings from disparate studies could be integrated through agreement on a

common measure of religion. At this stage Francis' vision was clearly constrained by a focus on the Christian tradition. Working within a dimensional model religiosity, distinguishing between dimensions like affiliation, behaviour, belief and attitude, the attitudinal dimension appeared attractive to Francis for four 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 surface behaviours and opinions. To access attitude toward religion is to get close to the heart of religion in an individual's life.

Second, following the pioneering analysis of Fishbein and Ajzen (1975), Francis (1978a, 1978b) argued that attitudes are concerned primarily with accessing the affective dimension of religiosity. The affective dimension is distinguished from the cognitive dimension (concerned with beliefs) and from the behavioural dimension (concerned with practice). The affective dimension is able to transcend the divisions between denominational perspectives, while beliefs tend to polarise such divisions. In a Christian context, for example, Catholics may believe one thing about the nature of God and Protestants may believe another, but both Catholics and Protestants may agree on the assessment of the extent to which their faith exercises a positive or negative influence on their lives. The affective dimension is less likely to be distorted by personal and contextual factors, while practice tends to be subject to all kinds of personal or social constraints. Whether an individual attends a place of worship may be influenced by personal factors (like state of health) or social factors (like pressure from parents), but negative and positive feelings about faith are much less likely to be contaminated by such factors.

Third, the affective dimension of religiosity 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).

Fourth, 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), Edwards (1957) and Osgood, Suci, & Tannenbaum (1957). By testing the performance of these various methods among different age groups, Francis (1978a, 1978b) identified the Likert technique as providing the most reliable and consistent scaling properties from the age of eight upwards through childhood and adolescence into adulthood.

The 24-item Likert scale, originally published by Francis (1978a), contains both negative and positive items concerned with an affective response to five components of the Christian faith accessible to and recognised by both children and adults, namely God, Jesus, bible, prayer and church. Each item is assessed on a five-point scale (agree strongly, agree, not certain, disagree, disagree strongly), producing a range of scores from 24 to 120. The many studies supporting the reliability and validity of the English language version of this scale are summarised, for example, by Francis, Lewis, Philipchalk, Brown, and Lester (1995) and Francis, Kerr, and Lewis (2005).

The Francis scale of Attitude toward Christianity has 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), Chinese (Francis, Lewis, & Ng, 2002), Dutch (Francis & Hermans, 2000), French (Lewis & Francis, 2003), German (Francis, Ziebertz, & Lewis, 2002), Greek (Youtika, Joseph, & Diduca, 1999), Norwegian (Francis & Enger, 2002), Portugese (Ferreira & Neto, 2002), Spanish (Campo-Arias, Oviedo,

Dtaz, & Cogollo, 2006), Swedish (Eek, 2001), and Welsh (Evans & Francis, 1996).

By the mid-1990s over one hundred independent studies had employed the Francis Scale of Attitude toward Christianity to examine a wide range of correlates of attitude toward Christianity during childhood, adolescence and adulthood. These studies were summarised and synthesised by Kay and Francis (1996). The field has grown considerably since that review undertaken in the mid 1990s. For example, the Francis Scale of Attitude toward Christianity has been employed alongside a number of measures concerned with assessing constructs such as: alcohol related attitudes (Francis, Fearn, & Lewis, 2005), conservatism (Lewis & Maltby, 2000), creationism (Fulljames & Francis, 2003), dissociation (Dorahy & Lewis, 2001), dogmatism (Francis, 2001), gender orientation (Francis, 2005), happiness (Francis, Jones, & Wilcox, 2000), life satisfaction (Lewis, 1998), paranormal belief (Williams, Francis, & Robbins, 2006), pro-social values (Schludermann, Schludermann, & Huynh, 2000), psychological balanced affect (Francis, Jones and Wilcox, 1997), psychological distress (O'Connor, Cobb, & O'Connor, 2003) psychological health (Francis, Lewis & Ng, 2003), purpose in life (French & Joseph, 1999), religious experience (Francis, ap Sion, Lewis, Robbins, & Barnes, 2006) and schizotypal traits (Joseph & Diduca, 2001).

Francis and his colleagues began to tackle the second problem in the mid-1990s when various colleagues immersed in other faith traditions began to experiment with translating the concepts underpinning the Francis Scale of Attitude toward Christianity into the context of other world faiths. The Katz-Francis Scale of Attitude toward Judaism has, for example, been used to test whether a similar relationship between religion and happiness exists in a Jewish context as in a Christian context (Francis & Katz, 2002, 2007; Francis, Katz, Yablon, & Robbins, 2004). The Santosh-Francis Scale of Attitude toward Hinduism has, for example, been used to test whether a similar relationship between religion and personality exists in a Hindu context as in a Christian context (Francis, Santosh, Robbins, & Bhanot, in press;

Francis, Robbins, Santosh, & Bhanot, in press).

In order to build on this secure research tradition within an Islamic context, Sahin and Francis (2002) proposed a thorough translation of the concepts of the Francis Scale of Attitude toward Christianity to produce a parallel instrument concerned with measuring attitude toward Islam. 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 items which mapped closely onto the area assessed by the parent instrument. These items were arranged for response on a five-point Likert-type scale: agree strongly, agree, not certain, disagree, and disagree strongly. The questionnaire was completed by 381 Muslim adolescents attending three sixth-form colleges in Birmingham. The sample comprised 164 females and 217 males; 50 16 year olds, 90 17 year olds, 123 18 year olds, 98 19 year olds, and 20 20 year olds. Of the total sample, 24% prayed five times daily, 18% prayed several times a week, 11% prayer every Friday, 41% prayed sometimes and 7% never prayed. The respondents were mainly from Pakistani and Bangladeshi family backgrounds. According to these data, the 23 items comprised a scale characterised by homogeneity, unidimensionality and internal consistency reliability. The alpha coefficient was established as 0.90, while the proportion of variance accounted for by the first factor proposed by the unrotated solution generated by principal component analysis was 36%. Attitude scores correlated +0.24 ($p < .001$) with personal prayer/salāt. This statistic supports the construct validity of the attitude scale in light of the theory that attitudes should predict behaviour but in a complex and subtle manner. The correlation of this magnitude indicated that, although significantly correlated, attitude toward Islam and the practice of personal prayer accessed different aspects of religiosity.

Khan and Watson (2006a) extended the work of Sahin and Francis (2002) by examining the factor structure and validity of the Sahin-Francis Scale of Attitude toward

Islam among a sample of 75 male and 75 female English-speaking students from the University of Karachi in Pakistan. On the basis of this study they concluded that ‘these data identified the Sahin-Francis Scale as a useful measure for studying Muslim attitudes within an Islamic society’ (p. 231).

Against this background the first aim of the present study is to examine the psychometric properties of the Sahin-Francis Scale of Attitude toward Islam among young adults living in Kuwait, as a preparatory step toward establishing a coherent research programme exploring the correlates of individual differences in religiosity within an Islamic cultural setting. The 23 items of the Sahin-Francis Scale of Attitude toward Islam, developed originally for English-speaking Muslim adolescents in England was translated into Arabic and back-translated in order to ensure accuracy. Initial pilot tests indicated that some of the negatively phrased items acceptable in England were less acceptable in a predominantly Islamic culture. For this reason the original item ‘Allah/God doesn’t mean anything to me’ was replaced by the positively phrased item ‘Allah/God means everything to me’. The original item ‘I find it hard to believe in Allah/God’ was replaced by the positively phrased item ‘I do not find it hard to believe in Allah/God’.

Although the Sahin-Francis Scale of Attitude toward Islam seems to project adequately onto an Islam context the affective response to religion operationalised in a different context by the Francis Scale of Attitude toward Christianity, there is another aspect of the individual’s response to Islam which may be highly related to the dimension assessed by the Sahin-Francis Scale. This aspect is personal commitment to Islamic moral values. In order to address this issue, the Sahin Index of Islamic Moral Values was constructed around the key Muslim ethical concept *Akhlāq*, an Arabic plural noun (singular *Khuluq*) meaning disposition, an individual’s fundamental value orientation in life and his/her essential nature of being in the world. As such *Akhlāq*, together with the concept of *Adab*, refers to an

individual's character and his/her overall personal/social conduct (Ibn Manzur, 1986, v.3, p. 45; Donaldson, 1953; Izutsu, 2002).

In an Islamic worldview values are not sharply divided as religious and moral but both are recognized to be essential aspects of a faithful personality. As such etymologically *Khuluq* is closely related to *al-Din*, the Qur'anic concept for religion, as they both refer to totality of a life style that a person adopts. Hence, the Qur'an refers to the prophet Muhammad as being "on a noble character/way of life (*Khuluq*)" (68; 4). The classical Muslim commentators suggest that in this verse *Khuluq* conveys the overall meaning of *al-Din* (Tabari, 1984, v.14, p.18). Diverse Muslim intellectual /spiritual traditions classify religion (*al-Din*), and, by implication, religiosity (*Tadayyun*) into several interrelated dimensions; belief (*Itiqād*), worship (*Ībādāt*), social interaction (*Muāmalāt*) and morals (*Akhlāq*). Within this Muslim multidimensional perception of religiosity/religious subjectivity (*Tadayyun*) attitude to religion (Islam) is closely related to attitude towards morality (Sahin, 2005).

Since morality in Islam has a diverse content area the index included honesty, doing good, respect for parents, respect for tradition, and several other general moral values, coupled with the suspicious perception of cultural manifestations inimical to the ethos of Islam. A rich pool of items was generated by the third and fourth authors in dialogue with Muslim theologians and scholars. Initial correlational analyses reduced this pool to the 17 items now included in the index. The second aim of the present study, therefore, is to examine the psychometric properties of this second instrument and to map the relationship between attitude toward Islam and Islamic moral values.

Method

Measures

The Sahin-Francis Scale of Attitude toward Islam comprises the 23 items listed in table 1. Each item is assessed on a five-point scale: agree strongly, agree, not certain, disagree, and disagree strongly.

The Sahin Index of Islamic Moral Values comprises the 17 items listed in table 3. Each item is assessed on a five-point scale: agree strongly, agree, not certain.

Frequency of prayer was assessed on a five-point scale: obligatory and additional prayers, obligatory prayers only, sometimes, Fridays, and never.

Sample

Thoroughly completed questionnaires were returned by 1,199 students, selected from secondary schools in six educational districts in Kuwait. The sample comprised 603 males and 596 females; 812 were 17 years of age and 387 were 18 years of age. The majority of the respondents were highly religious in terms of their commitment to prayer: 20% practised the obligatory prayers and additional prayers; 60% practised the obligatory prayers; 17% prayed sometimes; 1% prayed on Fridays only; and 2% never prayed.

Results

Table 1 presents the item rest of test correlations and the factor loadings on the

- insert table 1 about here -

unrotated solution proposed by principal component analysis for the 23 items of the Sahin-Francis Scale of Attitude toward Islam, together with the alpha coefficient and the percentage of variance explained by the factor. Both sets of statistics support the conclusion that the scale is characterised by homogeneity, unidimensionality and internal consistency reliability within the sample. The alpha coefficient is established as 0.85, while the proportion of variance accounted for by the first factor is established as 29%. It should be noted, however,

that both of these statistics are somewhat lower than those generally associated with the parent instrument.

The mean scale scores recorded on the Sahin-Francis Scale of Attitude toward Islam were examined against a range of key demographic factors: sex, age, subject major, father's educational level, mother's educational level, family income, parental marital status, and whether both parents are still alive. The data demonstrated that only three of these eight demographic variables predict individual differences in mean scale scores of attitude toward Islam, namely father's educational level ($F = 4.1, p < .01$), parental marital status ($F = 6.1, p < .001$) and whether both parents are still alive ($F = 13.5, p < .001$). It should be noted, however, that the mean scale score is somewhat higher and the standard deviation somewhat lower than those generally associated with the parent instrument.

Table 2 presents the item rest of test correlations and factor loadings on the unrotated solution proposed by principal component analysis for the 17 items of the Sahin Index of

- insert table 2 about here -

Islamic Moral Values, together with the alpha coefficient and the percentage of variance explained by the factor. Once again, both sets of statistics support the internal consistency reliability of the scale within the sample. The alpha coefficient is established at 0.80, while the proportion of variance accounted for by the first factor is established as 26%.

Table 3 completes the picture by presenting the mean scale scores recorded on the

- insert table 3 about here -

Sahin Index of Islamic Moral Values by a range of demographic factors. The data demonstrate that all but one of these eight demographic variables predict individual differences in mean scale scores of Islamic moral values, namely sex, age, academic discipline, father's educational level, mother's educational level, parents' life status and parents' marital status.

While the formal statistics of reliability are relatively easy to calculate for an attitude scale (Livingston, 1988), the question of assessing validity is more problematic (Ebel, 1961; Zeller, 1988). Steps towards assessing the construct validity of these scales can be made by assessing the extent to which certain predictions about the theoretical variations in attitude scores are reflected empirically (Cronbach & Meehl, 1955; Orton, 1987). While attitudes alone may not be simple or direct predictors of behaviour (Ajzen, 1988; Eiser & van der Pligt, 1988), substantial evidence suggests a relationship between attitude towards religion and religious behaviour, as demonstrated by repeated studies using the Francis Scale of Attitude toward Christianity among children and adolescents (Francis, 1989). In their foundation study for the Sahin-Francis Scale of Attitude toward Islam, Sahin and Francis (2002) reported a correlation of .24 between scores recorded on this scale and personal prayer/salāt.

In the present study, the following associations were found: attitude toward Islam and Islamic moral values, $r = .56$, $p < .001$; attitude toward Islam and personal prayer/salāt, $r = .41$, $p < .001$; Islamic moral values and personal prayer/salāt, $r = .30$, $p < .001$. Correlations of this magnitude indicate that all three variables are clearly associated, but far from synonymous. In other words, different aspects of religiosity are being accessed by these scales.

Conclusion

This study set out to contribute to a relatively new and growing body of literature concerned with establishing an empirically-based psychology of religion within an Islamic context. It adds to the framework of knowledge already provided by studies like Wilde and Joseph (1997), Thorson, Powell, Abdel-Khalek, and Beshai (1997), Ghorbani, Watson, Ghramaleki, Morris, and Hood (2000, 2002), Leach, Piedmont, and Monteiro (2001), Hood, Ghorbani, Watson, Ghramaleki, Bing, Davidson, Morris, and Williamson (2001), Watson,

Ghorbani, Davison, Bing, Hood, and Ghramaleki (2002), Abdel-Khalek (2002, 2006), Khan and Watson (2004, 2006b), Ghorbani, Watson, Krauss, Bing, and Davison (2004), Khan, Watson, and Habib (2005), Ghorbani, and Watson (2006), Krauss, Hamzah, Suandi, Noah, Juhar, Manap, Mastor, Kassar, and Mahmood (2006), Mazidi and Ostovar (2006), Baroun (2006), Ghorbani, Watson, and Mirhasani (2007), Anthony, Hermans, and Sterkens (2007), Ji and Ibrahim (2007), Abdel-Khalek and Lester (2007), and Aguilar-Vafaie and Abiari (2007).

The perennial problem in the psychology of religion concerns the integration of findings from studies which have operationalised different understandings of religiosity, or even used different instruments which purport to operationalise similar understandings of religion. The present paper has addressed this problem by proposing a way in which a family of instruments grounded in an operationalisation of the notion of attitude toward religion can begin to facilitate the generation of comparable findings across different religious traditions. The Sahin-Francis Scale of Attitude toward Islam was originally proposed by Sahin and Francis (2002) to provide an instrument for use in an Islamic context comparable with instruments designed for use among other religious traditions: the Francis Scale of Attitude toward Christianity, the Katz-Francis Scale of Attitude toward Judaism and the Santosh-Francis Scale of Attitude toward Hinduism. Data provided by a sample of 1,199 17- to 18-year-old students selected from secondary schools in six educational districts in Kuwait have supported the unidimensionality, internal consistency reliability and construct validity of this instrument. The data have also demonstrated the usefulness of the instrument to examine how a range of key demographic factors predict individual differences in religiosity among this population. Further research would now be helpful to confirm the psychometric properties of this instrument among other age groups in other Islamic countries. The evidence so far, however, suggests that this instrument is likely to prove to be robust and can be commended for further use. A connected programme of empirical research employing this

instrument within an Islamic context would be capable of building up a secure knowledge about the empirical correlates of religion comparable with the knowledge generated by the programme of research using Francis' original instrument within a Christian context, and by the programmes also underway in Jewish and Hindu contexts.

Recognising the central role of ethical conduct within the Islamic tradition, the present study has introduced a second new measure, the Sahin Index of Islamic Moral Values. Data provided by the same group of students have also supported the unidimensionality, internal consistency reliability and construct validity of this instrument. The correlation between scores recorded on the Sahin Index of Islamic Moral Values and the Sahin-Francis Scale of Attitude toward Islam demonstrate that these two variables are closely associated but not synonymous. This instrument can also be commended for further use.

Note

Scholars interested in collaborating with a programme of research employing the Sahin-Francis Scale of Attitude toward Islam are invited to contact Professor Leslie J Francis at l.j.francis@bangor.ac.uk

References

- Abdel-Khalek, A. M. (2002). Age and sex differences for anxiety in relation to family size, birth order, and religiosity among Kuwaiti adolescents. *Psychological Reports, 90*, 1031-1036.
- Abdel-Khalek, A. M. (2006). Happiness, health, and religiosity: significant relations., *Mental Health, Religion and Culture, 9*, 85-97.
- Abdel-Khalek, A. M., & Lester, D. (2007). Religiosity, health and psycho-pathology in two cultures: Kuwait and USA. *Mental Health, Religion and Culture, 10*, 537-550.
- Aguilar-Vafaie, M. E., & Abiari, M. (2007). Coping Response Inventory: assessing coping among Iranian college students and introductory development of an adapted Iranian Coping Response Inventory (CRI). *Mental Health, Religion and Culture, 10*, 489-513.
- Ajzen, I. (1988). *Attitudes, personality and behaviour*. Milton Keynes: Open University Press.
- Anthony, F.-V., Hermans, C. A. M., and Sterkens, C. (2007). Religious practice and religious socialisation: Comparative research among Christian, Muslim and Hindu students in Tamilnadu, India. *Journal of Empirical Theology, 20*, 100-128.
- Argyle, M. (1958). *Religious behaviour*. London: Routledge and Kegan Paul.
- Baroun, K. A. (2006). Relations among religiosity, health, happiness, and anxiety for Kuwaiti adolescents. *Psychological Reports, 99*, 717-722.
- 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., & Meehl, P. (1955). Construct validity in psychological tests. *Psychological Bulletin, 52*, 281-302.
- Donaldson, D. M (1953). *Studies in Muslim ethics*. London: Luzac and Co.

- 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.
- Ebel, R. L. (1961). Must all tests be valid? *American Psychologist, 16*, 640-647.
- Edwards, A. L. (1957). *Techniques of attitude scale construction*. New York: Appleton-Century-Crofts.
- Eek, J. (2001). *Religious facilitation through intense liturgical participation: A quasi-experimental study of Swedish pilgrims to Taizé*. Lund: University of Lund Studies in Psychology of Religion.
- Eiser, J. R., & van der Pligt, J. (1988). *Attitudes and decisions*. London: Routledge.
- 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.
- Ferreira, A. V., & Neto, F. (2002). Psychometric properties of the Francis Scale of Attitude toward Christianity among Portuguese university students. *Psychological Reports, 91*, 995-998.
- Fishbein, M., & Ajzen, I. (1975). *Belief, attitude, intention and behaviour: An introduction to theory and research*. Reading, Massachusetts: Addison-Wesley.
- 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. (1978a). Attitude and longitude: A study in measurement. *Character Potential: a record of research, 8*, 119-130.
- Francis, L. J. (1978b). Measurement reapplied: Research into the child's attitude towards religion. *British Journal of Religious Education, 1*, 45-51.
- 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., ap Siôn, T., Lewis, C. A., Robbins, M., & Barnes, L. P. (2006). Attitude toward Christianity and religious experience: Replication among 16- to 18-year-old adolescents in Northern Ireland. *Research in Education*, 76, 56-61.
- 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., & 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., Jones, S. H., & Wilcox, C. (2000). Religiosity and happiness: During adolescence, young adulthood and later life. *Journal of Psychology and Christianity*, 19, 245-257.
- Francis, L. J., & Katz, Y. J. (2002). Religiosity and happiness: A study among Israeli female undergraduates. *Research in the Social Scientific Study of Religion*, 13, 75-86.
- 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., Katz, Y. J., Yablon, Y. & Robbins, M. (2004). Religiosity, personality, and happiness: A study among Israeli male undergraduates, *Journal of Happiness Studies*, 5, 315-333.
- 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., 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, C. A., & Ng, P. (2003). Psychological health and attitude toward Christianity among secondary school pupils in Hong Kong. *Journal of Psychology in Chinese Societies*, 4, 231-245.
- 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., Robbins, M., Santosh, R., & Bhanot, S. (in press). Religion and mental health among Hindu young people in England. *Mental Health, Religion and Culture*.
- Francis, L. J., Santosh, R., Robbins, M., & Bhanot, S. (in press). Assessing attitude toward Hinduism: The Santosh Francis Scale. *Mental Health Religion and Culture*.
- 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. (2003). Creationism among people in Kenya and Britain. In S. Coleman and L. Carlin (Eds), *The Cultures of creationism: anti-evolution in English-speaking countries* (pp. 165-173). Aldershot: Ashgate.
- Ghorbani, N., & Watson, P. J. (2006). Religious orientation types in Iranian Muslims: Differences in alexithymia, emotional intelligence, self-consciousness, and psychological adjustment. *Review of Religious Research*, 47, 303-310.
- Ghorbani, N., Watson, P. J., Ghramaleki, A. F., Morris, R. J., & Hood, R. W. (2000). Muslim attitudes toward religion scale: Factors, validity and complexity of relationships with mental health in Iran. *Mental Health, Religion and Culture*, 3, 125-132.
- Ghorbani, N., Watson, P. J., Ghramaleki, A. F., Morris, R. J., & Hood, R. W. (2002). Muslim-Christian religious orientation scales: Distinctions, correlations, and cross-cultural analysis in Iran and the United States. *The International Journal for the Psychology of Religion*, 12, 69-91.
- Ghorbani, N., Watson, P. J., Krauss, S. W., Bing, M. N., & Davison, H. K. (2004). Social science as dialogue: Narcissism, individualist and collectivist values, and religious interest in Iran and the United States, *Current Psychology: developmental, learning and personality*, 23, 111,123.
- Ghorbani, N., Watson, P. J., & Mirhasani, V. S. (2007). Religious commitment in Iran: correlates and factors of quest and extrinsic religious orientation. *Archive for the Psychology of Religion*, 29, 245-257.
- Guttman, L. (1944). A basis for scaling qualitative data. *American Sociological Review*, 9, 139-150.
- Hill, P. C., & Hood, R. W. (Eds) (1999). *Measures of religiosity*. Birmingham: Alabama, Religious Education Press.

- Hood, R. W. Jr., Ghorbani, N. Watson, P. J., Ghramaleki, A. F., Bing, M. N., Davison, H. K., Morris, R. J., & Williamson, W. P. (2001). Dimensions of the Mysticism Scale: Confirming the three-factor structure in the United States and Iran. *Journal for the Scientific Study of Religion, 40*, 691-705.
- Ibn Manzur, M. (1984). *Lisan al Arab*. Cairo: Dar al-Maaraif.
- Izutsu, T. (2002). *Ethico-religious concepts in the Qur'an*. London: McGill-Queen's University Press.
- Ji, C.-H., & Ibrahim, Y. (2007). Islamic doctrinal orthodoxy and religious orientations: Scale development and validation. *International Journal for the Psychology of Religion, 17*, 189-208.
- Joseph, S., & Diduca, D. (2001). Schizotypy and religiosity in 13-18 year old school pupils. *Mental Health, Religion and Culture, 4*, 63-69.
- Kay, W. K., & Francis, L. J. (1996). *Drift from the churches: Attitude toward Christianity during childhood and adolescence*. Cardiff: University of Wales Press.
- Khan, Z.H., & Watson, P. J. (2004). Religious orientation and the experience of *Eid-ul-Azha* among Pakistani Muslims. *Journal for the Scientific Study of Religion, 34*, 537-545.
- Khan, Z.H. and Watson, P.J. (2006a). Factorial complexity and validity of the Sahin-Francis Attitude toward Islam Scale among Pakistani university students. *Journal of Beliefs and Values, 27*, 231-235.
- Khan, Z. H. and Watson, P. J. (2006b), Construction of the Pakistani Religious Coping Practices Scale: Correlations with religious coping, religious orientation, and reactions to stress among Muslim university students. *International Journal for the Psychology of Religion, 16*, 101-112.

- Khan, Z. H., Watson, P. J., & Habib, F. (2005). Muslim attitudes toward religion, religious orientation and empathy among Pakistanis. *Mental Health, Religion and Culture*, 8, 49-61.
- Krauss, S. E., Hamzah, A. H., Suandi, T., Noah, S. M., Juhar, R., Manap, J. H., Mastor, K. A., Kassar, H., & Mahmood, A. (2006). Exploring regional differences in religiosity among Muslim youth in Malaysia. *Review of Religious Research*, 47, 238-252.
- Krech, D., Crutchfield, R. S., & Ballackey, E. L. (1962). *Individual in society*. New York: McGraw-Hill.
- Leach, M. M., Piedmont, R. L., & Monteiro, D. (2001). Images of God among Christians, Hindus, and Muslims in India. *Research in the Social Scientific Study of Religion*, 12, 207-225.
- Lewis, C. A. (1998). Towards a clarification of the association between religiosity and life satisfaction. *Journal of Beliefs and Values*, 19, 119-122.
- 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., & Maltby, J. (2000). Conservatism and attitude toward Christianity. *Personality and Individual Differences*, 29, 793-798.
- Likert, R. (1932). A technique for the measurement of attitudes. *Archives of Psychology*, 140, 1-55.
- Livingston, S. A. (1988). Reliability of test results. In J. P. Keeves (Ed.), *Educational research, methodology and measurement: An international handbook* (pp. 386-392). Oxford: Pergamon Press.
- Mazidi, M., & Ostovar, S. (2006). Effects of religion and type of religious internationalisation on the mental health of Iranian adolescents. *Perceptual and Motor Skills*, 103, 301-306.

- 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).
- O'Connor, D. B., Cobb, J., & O'Connor, R. C. (2003). Religiosity, stress and psychological distress: No evidence for an association among undergraduate students. *Personality and Individual Differences, 34*, 211-217.
- Orton, R. E. (1987). The foundations of construct validity: Towards an update. *Journal of Research and Development in Education, 21*, 22-35.
- Osgood, C. E., Suci, G. J., & Tannenbaum, P. H. (1957). *The measurement of meaning*. Urbana, Illinois: University of Illinois Press.
- Sahin, A. (2005). Exploring the religious life-world and attitude toward Islam among British Muslim adolescents. In L. J. Francis, M. Robbins & J. Astley (Eds) *Religion, education and adolescence: International and empirical perspectives* (pp. 164-184). Cardiff: University of Wales Press.
- Sahin, A., & Francis, L. J. (2002). Assessing attitude toward Islam among Muslim adolescents: The psychometric properties of the Sahin Francis scale. *Muslim Educational 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.
- Spilka, B., Hood, R. W., Hunsberger, B., & Gorsuch, R. (Eds) (2003). *The psychology of religion: An empirical approach* (third edition). New York: Guilford Press.
- Tabari, Abu Ja'far (1984). *Jami' al-bayan fi ta'wil al-Qur'an*. Beirut: Dar al Fikr Press.
- Thorson, J. A., Powell, F. C., Abdel-Khalek, A. M., & Beshai, J. A. (1997). Constructions of religiosity and death anxiety in two cultures: The United States and Kuwait. *Journal of*

Psychology and Theology, 25, 374-383.

Thurstone, L. L. (1928). Attitudes can be measured. *American Journal of Sociology*, 33, 529-554.

Watson, P. J., Ghorbani, N., Davison, H. K., Bing, M. N., Hood, R. W., & Ghramaleki, A. F. (2002). Negatively reinforcing personal extrinsic motivations: Religious orientation, inner awareness, and mental health in Iran and the United States. *International Journal for the Psychology of Religion*, 12, 255-276.

Wilde, A., & Joseph, S. (1997). Religiosity and personality in a Moslem context. *Personality and Individual Differences*, 23, 889-900.

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.

Zeller, R. A. (1988). Validity. In J. P. Keeves (Ed.), *Educational research, methodology, and measurement: An international handbook* (pp. 322-330). Oxford: Pergamon Press.

Table 1: The Sahin-Francis Scale of Attitude toward Islam: item rest of test correlations and factor loadings

scale item	r	factor loading
I find it inspiring to listen to the Qur'ān	.52	.60
I know that Allah/God helps me	.38	.47
Saying my prayers/ <i>du'ā'</i> helps me a lot	.56	.64
Attending the Mosque is very important to me	.51	.58
I think going to the Mosque is a waste of my time*	.18	.16
I want to obey Allah/God=s law/ <i>sharī'ah</i> in my life	.48	.54
I think Mosque sermons/ <i>khutbah</i> are boring*	.41	.43
Allah/God helps me to lead a better life	.40	.48
I like to learn about Allah/God very much	.48	.57
Islam means a lot to me	.45	.52
I believe that Allah/God helps people	.42	.51
Prayer/ <i>salāt</i> helps me a lot	.60	.69
I feel that I am very close to Allah/God	.53	.62
I think praying/ <i>salāt</i> is a good thing	.48	.58
I think the Qur'ān is out of date*	.30	.29
I believe that Allah/God listens to prayers/ <i>du'ā'</i>	.47	.54
Allah/God means everything to me	.29	.37
Allah/God is very real to me	.55	.63
I think praying/ <i>du'ā'</i> does no good*	.27	.29
Belief in Allah/God means much to me	.54	.62
I do not find it hard to believe in Allah/God	.49	.56
I am happy to be a Muslim	.51	.61
I love to follow the life/ <i>sunnah</i> of the Prophet	.58	.66
Alpha/percent variance	.85	29%

Note * these negative items were reverse scored

Table 2: The Sahin Index of Islamic moral values: item rest of test correlations and factor loadings

scale item	r	factor loading
I believe honesty is always good regardless of the consequences	.43	.53
I try hard to be a good role model for others	.55	.65
I do not hide my mistake if I knew it would hurt me	.34	.44
I feel bad when someone damages other's properties	.43	.54
I do not think that I am a good role model for others*	.30	.37
I admire friends who listen to their parents' advice	.53	.64
I do not attempt to lie when I face a critical situation	.35	.45
I feel happy when others are satisfied with my conduct	.32	.44
I do not like to follow the advice given by the elderly*	.34	.41
I hate watching movies with low negative moral values	.39	.48
I avoid friendship with people who smoke	.39	.47
I do not attempt cheating in exams	.41	.49
I hate to listen to my parents' advice*	.41	.47
I like to participate as a volunteer	.51	.61
My freedom should not conflict with others' freedom	.36	.48
I feel pain when moral crimes increase in society	.49	.60
I encourage equal opportunities among people	.40	.52
Alpha/percent variance	.80	26%

Note * these negative items were reverse scored

Table 3: The Sahin Index of Islamic Moral Values: mean scale scores

group	N	mean	sd	F	P<
<i>sex</i>					
male	603	65.9	9.5		
female	596	69.9	8.1	61.0	.001
<i>age</i>					
under 18	812	68.3	8.9		
18 and above	387	67.0	9.2	5.8	.05
<i>subject major</i>					
science	591	67.3	9.7		
arts	608	68.4	8.4	4.3	.05
<i>father's education</i>					
illiterate	46	70.1	8.6		
intermediate	267	69.3	7.8		
secondary	195	67.7	9.2		
diploma	219	66.9	8.9		
graduate	472	67.3	9.7	3.7	.01
<i>mother's education</i>					
illiterate	133	70.5	7.4		
intermediate	270	68.6	8.5		
secondary	176	68.7	8.7		
diploma	237	66.3	9.0		
graduate	382	66.9	9.9	6.7	.001
<i>family income</i>					
under 600KD	270	68.0	9.2		
600-799 KD	243	68.2	8.3		
800-999 KD	304	67.7	9.3		
1,000 plus KD	382	67.6	9.3	0.3	NS
<i>parents' life status</i>					
both alive	1066	67.9	9.0		
father dead	92	68.3	9.4		
mother dead	33	67.6	7.4		
both dead	8	53.8	13.8	6.7	.001
<i>parents' marital status</i>					
intact	1132	67.9	9.0		
separated	67	66.7	9.7	1.1	NS