Religion and happiness: A study among university students in Turkey

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Abstract

This study tests the hypothesis that higher levels of positive religious affect are associated with higher levels of personal happiness among a sample of 348 students studying at a state university in Turkey who completed the Ok Religious Attitude Scale (Islam), the Oxford Happiness Inventory, and the short-form Eysenck Personality Questionnaire Revised. The data reported a small but statistically significant association between religiosity and happiness after taking sex and individual differences in personality into account.

Keywords: Religion, happiness, personality, psychology, Israel, Oxford Happiness Inventory.

Introduction

Michael Argyle's systematic reviews and evaluations of the knowledge generated from empirical studies in the psychology of religion published over four decades (Argyle, 1958; Argyle & Beit-Hallahmi, 1975; Beit-Hallahmi & Argyle, 1997), drew attention to two general weaknesses in the field. The more recent reviews and evaluations published by Spilka, Hood, Hunsberger, and Gorusch (2003) and Hood, Hill, and Spilka (2009) demonstrate the extent to which these two weaknesses still remain.

Addressing the first weakness

The first weakness concerns the fragmented nature of the main body of empirical evidence that has been amassed over the past five decades. The evidence is fragmented in the sense of the lack of agreement in the measurements and concepts employed. It is this lack of agreement about measures and concepts that make it so difficult to interrogate and interpret the findings. The point was illustrated specifically in connection with research evidence concerning the link between religion and happiness by the detailed review of empirical evidence in this field reported by Robbins and Francis (1996). The review identified studies that demonstrated a positive association between religion and happiness, studies that demonstrated a negative association, and studies that demonstrated no association.

Robbins and Francis (1996) suggested that such discrepancies might be attributable, at least in part, to the wide range of conceptualisations and operationalisations of both religion and happiness in these studies. Drawing on the basic scientific principle of establishing a secure body of empirically-grounded knowledge through careful replication of well-designed studies, they proposed the value of initiating a co-ordinated series of studies exploring the association between religion and happiness by means of the same family of measures being applied in different contexts and among different samples. Specifically they identified as providing an appropriate basis for such a programme Argyle's conceptualisation of happiness

as operationalised in the Oxford Happiness Inventory (Argyle & Crossland, 1987; Argyle, Martin, & Crossland, 1989) and Francis' conceptualisation of the affective dimension of religion as operationalised in the Francis Scale of Attitude toward Christianity (Francis, Lewis, Philipchalk, Brown, & Lester, 1995).

Argyle's notion of happiness

The Oxford Happiness Inventory was developed by Michael Argyle and his associates (Argyle & Crossland, 1987; Argyle, Martin, & Crossland, 1989). This operationalisation of happiness embraced three components of the construct: the frequency and degree of positive affect or joy; the average level of satisfaction over a period; and the absence of negative feelings, such as depression and anxiety. Working from this definition, they developed the Oxford Happiness Inventory for which they reported an internal reliability of .90 using alpha (Cronbach, 1951), and a 7-week test-retest reliability of .78. Construct validity was established against recognised measures of the three hypothesised components of happiness showing correlations of .32 with the positive affect scale of the Bradburn Balanced Affect measure (Bradburn, 1969), -.52 with the Beck Depression Inventory, and .57 with Argyle's life satisfaction index.

Initial research employing the Oxford Happiness Inventory was restricted to the English language. More recently such research has been extended by a series of studies developing forms of the instrument in Arabic (Abdel-Khalek, 2005), Chinese (Lu & Shih, 1997; Lu, Shih, Lin, & Ju, 1997; Lu & Lin, 1998; Lu, Gilmore, Kao, Weng, Hu, Chern, Huang, & Shih, 2001), German (Lewis, Francis, & Ziebertz, 2002) Japanese (Furnham & Cheng, 1999), Hebrew (Francis & Katz, 2000), Italian (Meleddu, Guicciardi, Scalas, & Fadda, 2012), Persian (Liaghatdar, Jafarc, Abedi, & Samiee, 2008; Bayani, 2008), and Portugese (Neto, 2001).

The Oxford Happiness Inventory became quickly established in the literature as

providing a reliable and valid measure of happiness, thus enabling the integration of findings

from disparate studies across a range of areas. Recent examples of the use of the Oxford

Happiness Inventory are provided by Pannells and Claxton (2008) exploring the connections

between happiness, creative ideation and locus of control among college students in the USA;

Fisher (2013) exploring the contribution to variance in happiness made by relating with God,

over that from personality and age; Egan, Chan, and Shorter (2014) exploring the connection

between happiness, subjective wellbeing and the dark triad of psychopathy, narcissism and

Machiavellianism; and Khodarahimi (2014) exploring the role of gender on positive

psychology constructs.

The Oxford Happiness Inventory has also spawned a small family of related

measures, employing slightly different items in a different response format, including the

Oxford Happiness Questionnaire and the Oxford Happiness Questionnaire Short-form (see

Hills & Argyle, 2002) and the Oxford Happiness Measure (see Elken, Francis, & Robbins,

2010).

Francis' notion of the affective dimension of religion

The Francis Scale of Attitude toward Christianity (Francis, Lewis, Philipchalk,

Brown, & Lester, 1995) was originally developed by Francis (1978a, 1978b). Francis argued

that the affective or 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. The affective or attitudinal dimension appears particularly

attractive for the following reasons.

Drawing on the pioneering analysis of Fishbein and Ajzen (1975), Francis (1978a,

1978b) argued that attitudinal measures should focus on accessing the affective dimension of

religiosity, in a way that is clearly 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. 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. Moreover, 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).

Initial research employing the Francis Scale of Attitude toward Christianity was restricted to the English language. More recently the research has been extended by a series of studies developing forms of the instrument in a number of languages, including Arabic (Munayer, 2000), Czech (Francis, Quesnell, & Lewis, 2010), Chinese (Tiliopulous & Francis, 2013), Dutch (Francis & Hermans, 2000), French (Lewis & Francis, 2003), German (Francis & Kwiran 1999), Greek (Youtika, Joseph, & Diduca 1999), Italian (Crea, Baiocco, Ioverno, Buzzi, & Francis, 2014), Norwegian (Francis & Enger 2002), Portugese (Ferreira & Neto 2002), Romanian (Francis, Ispas, Robbins, Ilie, & Iliescu, 2009), Serbian (Flere, Francis, & Robbins, 2011), Slovenian (Flere, Klanjseck, Francis, & Robbins, 2008), Spanish (Campo-Arias, Oviedo, Dtaz, & Cogollo, 2006), Swedish (Eek, 2001), and Welsh (Evans & Francis, 1996).

The Francis Scale of Attitude toward Christianity became quickly established in the literature as providing a reliable and valid measure of religious affect enabling the interrogation of findings from disparate studies across a range of areas. Recent examples of the use of the Francis Scale of Attitude toward Christianity are provided by Swindells, Francis, and Robbins (2010) exploring the influence of sex, church, home, and primary

school on shaping attitude toward Christianity among 11- to 12-year-old students in England; Francis, Quesnell, and Lewis (2010) exploring the connection between personality and religion among secondary school students in the Czech Republic; Francis, Flere, Klanjsek, Williams, and Robbins (2013) exploring attitudes toward Christianity and new age beliefs among university students in Slovenia; Lewis and Francis (2014) exploring the connection between personality and religion among university students in France.

The twenty-four item Francis Scale of Attitude toward Christianity has also spawned a seven-item short form commended for use when time is short (Francis, 1993; Francis, Lewis, Philipchalk, Lester, & Brown, 1995).

Exploring religion and happiness

In the first of the series of studies, Robbins and Francis (1996) reported on the association between scores recorded on the Oxford Happiness Inventory and on the Francis Scale of Attitude toward Christianity among a sample of 360 first-year undergraduate students in Wales. After taking into account individual differences in personality as measured by the short-form Revised Eysenck Personality Questionnaire (Eysenck, Eysenck, & Barrett, 1985), the data demonstrated a significant positive correlations between attitude toward Christianity and happiness scores ($r = .26$, $p < .001$). This association remained positive after controlling for individual differences in sex, extraversion, neuroticism, psychoticism and scores recorded on the Eysenckian Lie Scale.

In a second study, Francis and Lester (1997) replicated the first study in a different cultural context. This time the Oxford Happiness Inventory, the Francis Scale of Attitude toward Christianity, and the short-form Revised Eysenck Personality Questionnaire were completed by a sample of 212 undergraduate students in the United States of America. This time a very similar correlation was reported between attitude toward Christianity and happiness scores ($r = .28$, $p < .001$) and once again the association persisted after controlling

for sex differences and for differences in personality.

Recognising that the first two studies had been conducted among undergraduate students, the third study reported by Francis and Robbins (2000) drew on a sample of 295 individuals, ranging in age from late teens to late seventies, recruited from participants attending a variety of courses and workshops on the psychology of religion. The same three instruments were included in the study: the Francis Scale of Attitude toward Christianity, the Oxford Happiness Inventory and the short-form Revised Eysenck Personality Questionnaire. The association between attitude toward Christianity and happiness scores was positive ($r = .30$, $p < .001$) and remained after controlling for sex differences and for differences in personality.

The next three studies were drawn together and published in one paper by Francis, Jones, and Wilcox (2000). The three samples reported in this paper covered adolescence, young adulthood, and later life, employing data provided by the following samples: 994 secondary school pupils during the final year of compulsory schooling (15- to 16-year-olds); 456 first-year undergraduate students in Wales; and 496 members of the University of the Third Age, a relatively informal educational network for senior citizens. All participants completed the Francis Scale of Attitude toward Christianity, the Oxford Happiness Inventory and the short-form Revised Eysenck Personality Questionnaire. The partial correlations between attitude toward Christianity and happiness scores, after controlling for sex and for personality, were as follows: adolescence, $r = .10$, $p < .01$; young adulthood, $r = .20$, $p < .001$; later life, $r = .16$, $p < .01$.

The next study reported by Francis, Robbins, and White (2003) among 89 students in Wales did not include the personality measure. However, after controlling for age and for sex, there was a significant correlation between attitude toward Christianity and happiness scores ($r = .38$, $p < .001$).

Taken together these seven samples (N = 360, 212, 295, 995, 456, 496, 89) demonstrated a consistent pattern of findings based on employing the same instruments in different contexts. The scientific strategy of replication seemed to be bearing fruit, although further studies remain desirable. On the other hand, two further replication studies failed to find this positive association between scores recorded on the Francis Scale of Attitude toward Christianity, using the German translation of the Oxford Happiness Inventory among 331 students (Francis, Ziebertz, & Lewis, 2003) and using the Estonian translation of the Oxford Happiness Measures among 150 students (Francis, Elken, & Robbins, 2012).

In parallel to the set of studies employing the Francis Scale of Attitude toward Christianity alongside the Oxford Happiness Inventory conducted by Francis and colleagues, a second set of studies initiated by Lewis, Lanigan, Joseph, and de Fockert (1997) employed the Francis Scale of Attitude toward Christianity alongside the Depression-Happiness Scale proposed by Joseph and Lewis (1998). In this initial study Lewis, Lanigan, Joseph, and de Fockert (1997) employed two samples: 154 undergraduate students in Northern Ireland and 67 undergraduate students in England. In a second study, French and Joseph (1999) employed a sample of 101 undergraduates in the UK. In a third study, Lewis, Maltby, and Burkinshaw (2000) employed two samples: 64 Anglican priests in England and 70 Anglican churchgoers in England. Considered separately all five samples reported no significant association between scores recorded on the Francis Scale of Attitude toward Christianity and the Depression-Happiness Scale. Reviewing the literature alongside the studies using the Oxford Happiness Inventory, Lewis and Cruise (2006) highlight the consistent difference found when happiness is assessed by different measures while keeping the measure of religiosity constant.

Controlling for personality

The majority of studies conducted by Francis and colleagues reviewed above

concerning the association between religion and happiness included the Eysenckian

dimensions of personality (see Eysenck & Eysenck, 1991) as a set of control variables to

guard against the accusation that observed connections between religion and happiness may

emerge as an artefact of individual differences in personality. The Eysenckian model

maintains that the most adequate, economical and efficient summary of individual differences

is provided by three higher order orthogonal dimensions defined by the high scoring end of

the three continua as extraversion, neuroticism, and psychoticism. The Eysenckian self-report

measures also routinely include a Lie Scale. The consensus from this body of research is that

personality is largely irrelevant in explaining the connection between religion and personality

for the following reason. The dimension of personality that predicts substantial individual

differences in religion is psychoticism (see Francis, 1992), while the dimensions of

personality that predict substantial differences in happiness are extraversion and neuroticism

(see Francis, Brown, Lester, & Philipchalk, 1998; Francis, 1999).

Addressing the second weakness

The second weakness with the main source of evidence available in the empirical

psychology of religion concerns the concentration of research within Christian or post-

Christian contexts. All seven samples reported above remain vulnerable to this basic

criticism. All seven samples were recruited from Christian or post-Christian contexts and

completed the Francis Scale of Attitude toward Christianity.

Recognising the desirability of establishing comparable measures of the attitudinal

dimension of religion across different religious traditions, Francis and his associates initiated

a programme to produce a family of measures equivalent to the Francis Scale of Attitude

toward Christianity, appropriate for other specific religions. The first development was the

Katz-Francis Scale of Attitude toward Judaism (Francis & Katz, 2007). 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 instrument 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). In an independent initiative Ok (2011) developed the Religious Attitude Scale (Islam) that has a lot in common with the principles underpinning the Francis family of attitudinal measures. This is an eight-item instrument designed to combine two items for each of four sub-measures characterised as cognition, emotion, behaviour, and relationship with God. Indeed some of the items closely reflect the intention of items included in the original Francis measure.

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).

Extending the evidence

The first study to extend Francis' series of studies concerned with the association between religion and happiness beyond the Christian and post-Christian context was reported by Francis and Katz (2002) among a sample of 298 Hebrew-speaking female undergraduate students who completed the Hebrew translation of the Oxford Happiness Inventory together with the Katz-Francis Scale of Attitude toward Judaism. This study found a small positive association between religion and happiness ($\beta = .11$; $p < .05$). Subsequently Francis, Katz, Yablon, and Robbins (2004) replicated this study among a sample of 203 Hebrew-speaking male undergraduate students who completed the same measures. This replication also found a small positive association between religion and happiness ($\beta = .21$; $p < .01$). In a further replication, reported by Francis, Yablon, and Robbins (2014), a sample of 348 Hewbrew-speaking female undergraduate students also completed the same measure. Once again this replication also found a small positive association between religion and happiness ($\beta = .17$; $p < .001$).

Against this background, the aim of the present study is to make a further independent contribution to knowledge by addressing the two weaknesses still prevalent within the empirical psychology of religion identified in the opening paragraphs of the present paper. The first weakness concerned the fragmenting nature of the literature caused by lack of agreement on the measures employed. The present study addresses this weakness by building on the solid commitment to the replication and extension of existing research through employing an established battery of instruments. The second weakness concerned the concentration of empirical research in the psychology of religion within Christian or post-Christian contexts. The present study addresses this weakness by working specifically within an Islamic environment in Turkey. Specifically the study builds directly on the earlier work conducted in Christian, post-Christian and Jewish contexts by extending that work to an Islamic context, employing the Religious Attitude Scale (Islam) developed by Ok (2011), the

Oxford Happiness Inventory, developed by Argyle, Martin, and Crossland (1989) and the

Eysenck Personality Questionnaire Revised (short form) developed by Eysenck, Eysenck,

and Barrett (1985) among a sample of university students in Turkey.

Method

Sample

A sample of 348 students (122 males and 226 females) attending a state university in

Turkey completed a short questionnaire as part of their coursework, across a range of

departments such as philosophy, psychology, sociology and education. They were assured of

complete confidentiality and anonymity and given the option not to participate in the project.

All students attending the coursework session willingly participated. The majority of the

participants were in their late teens, i.e. 17, 18 or 19 (20%) or early twenties, i.e. 20, 21 or 22

(56%) with 18% in their mid twenties, i.e. 24, 25 or 26, and 6% in their late twenties or early

thirties (age range: 17 to 32 years; mean age, 21.27 years, SD = 2.34).

Measures

The participants completed three measures: happiness was assessed by the Oxford

Happiness Inventory; religiosity was assessed by the Religious Attitude Scale (Islam);

personality was assessed by the Short-form Eysenck Personality Questionnaire Revised.

The Oxford Happiness Inventory (Argyle, Martin, & Crossland, 1989) is a 29-item

multiple choice instrument. Each item contains four options, constructed to reflect

incremental steps defined as: unhappy or mildly depressed, a low level of happiness, a high

level of happiness, and mania. The respondents are asked to 'pick out the one statement in

each group which best describes the way you have been feeling over the past week, including

today.' An example item reads: 'I don't feel life is particularly rewarding' (unhappy or mildly

depressed), 'I feel life is rewarding' (a low level of happiness), 'I feel that life is very

rewarding' (a high level of happiness), and 'I feel that life is overflowing with rewards'

(mania).

The Religious Attitude Scale (Islam) proposed by Ok (2011) is an eight-item Likert type instrument, concerned with four sub-dimensions of attitude toward religion, each of which is measured by two items in cognition, emotion, behaviour, and relationship with God. Each item is rated on a five-point scale: not at all, a little, half the time, mainly, and completely. Example items include: 'I really enjoy participating in religious activities' and 'I feel that God is very close to me'.

The short form of the Eysenck Personality Questionnaire Revised (Eysenck, Eysenck, & Barrett, 1985) is a 48-item instrument composed of four twelve-item measures of extraversion, neuroticism, psychoticism and a lie scale. Each item is assessed on a two point scale: yes and no. Example items from the extraversion scale include: 'Are you a talkative person?' and 'Can you easily get some life into a rather dull party?' Example items from the neuroticism scale include: 'Does your mood often go up and down?' and 'Are you a worrier?' Example items from the psychoticism scale include: 'Do you prefer to go your own way rather than act by the rules?' and 'Do you enjoy co-operating with others?'. Example items from the lie scale include: 'Have you ever blamed someone for doing something you knew was really your fault?' and 'Have you ever taken advantage of someone?'

Results

Table 1 presents the scale properties of the Oxford Happiness Inventory, the Religious Attitude Scale (Islam), and the short form of the Eysenck Personality Questionnaire Revised. Apart from the psychoticism scale all measures achieve satisfactory levels of internal consistency reliability as demonstrated by the alpha coefficient (Cronbach, 1951). The weaker performance of the psychoticism scale is consistent with the recognised difficulties involved in operationalising this construct (Francis, Brown, & Philipchalk, 1992). The performance of the psychoticism scale has been improved slightly in the present analyses by

the omission of three items, leaving a nine-item scale.

- Insert tables 1 and 2 here -

Table 2 presents the correlation coefficients between happiness, sex, religious attitude, extraversion, neuroticism, psychoticism and lie scale. The two main findings from these data are: that greater happiness is associated with high extraversion ($r = .38$, $p < .001$), with low neuroticism ($r = -.41$, $p < .001$), and with high lie scale scores ($r = .17$, $p < .001$); that more positive religious attitude is associated with low psychoticism ($r = -.39$, $p < .001$), with high lie scale scores ($r = .14$, $p < .01$) and with being female ($r = .12$, $p < .05$); and that there is a small positive association between happiness and religiosity ($r = .12$, $p < .05$).

- Insert table 3 here -

Table 3 takes the analysis one step further. In this multiple regression model, happiness stands as the dependent variable and the predictor variables were entered in the following fixed order: sex, extraversion, neuroticism, psychoticism, lie scale, and religiosity. The main finding from these data is that, after sex and individual differences in personality have been taken into account, scores of attitude toward Islam provide a further small but statistically significant predictor of a happiness, demonstrating that religious people are happier people ($\beta = .17$, $p < .001$).

Conclusion

Recognising two key weaknesses within the empirical psychology of religion identified by the early review published by Argyle (1958) and still evidenced by recent reviews (Spilka, Hood, Hunsberger, & Gorsuch, 2003; Hood, Hill, & Spilka, 2009), the present study was designed to build on a series of studies concerned with mapping the association between religion and happiness by employing the Oxford Happiness Inventory together with a family of instruments accessing the attitudinal dimension of religion. Working within this research tradition, the present study presents the findings from the first

sample to have completed the Oxford Happiness Inventory alongside a measure of attitude

toward Islam among university students in Turkey. The findings of this new study among

Muslim students (N = 348) is consistent with the three earlier studies (N = 298, 203, 284)

among Jewish students reported by Francis and Katz (2002), Francis, Katz, Yablon, and

Robbins (2004), and Francis, Yablon, and Robbins (2014). All four studies present a

consistent pattern of a significant positive association between religion and happiness, after

taking into account individual differences in personality as assessed by the Eysenckian

dimensional model. Within the multiple regression model the positive association between

religion and happiness is reflected in beta weights of similar size (β = .11, .21, .17, .17).

Taken together, the new study conducted within the Islamic tradition, the three studies

conducted within the Jewish tradition (Francis & Katz, 2002; Francis, Katz, Yablon, &

Robbins, 2004; Francis, Yablon, & Robbins, 2014), and the seven studies conducted within

the Christian tradition (Robbins & Francis, 1996; Francis & Lester, 1997; Francis & Robbins,

2000; Francis, Jones, & Wilcox, 2000; Francis, Robbins, & White, 2003) lead to the secure

conclusion that religious people are happier people, at least when happiness is conceptualised

and operationalised by the Oxford Happiness Inventory and religion is conceptualised and

operationalised by the Francis family of attitude scales. In this sense, a patient commitment to

the scientific principle of replication seems to be able to bear fruit in terms of developing a

secure base of knowledge within the empirical psychology of religion.

Finally, the outcome of this study can also help to shape a future agenda for empirical

research in the psychology of religion in two ways. First, the studies discussed in this paper

concerned with religion and happiness still remain limited to seven studies within the

Christian, three studies within the Jewish tradition, and just one study within the Islamic

tradition. Further replication of the present study is especially needed in the Islamic tradition.

There also remains the opportunity to extend this model of research to the Hindu tradition,

drawing on the Santosh-Francis Scale of Attitude toward Hinduism (Francis, Santosh, Robbins, & Vij, 2008). Second, the eleven studies concerned with religion and happiness have offered a model that could be applied to other questions within the empirical psychology of religion where currently a lack of clarity in extant empirical findings could also be attributed to lack of agreement and lack of consistency in the measures employed. The scientific principle of replication may hold the key to clarifying other areas as it seems to have done with the question of religion and happiness.

References

Abdel-Khalek, A. M. (2005). Happiness and death distress: Two separate factors. *Death Studies, 29*, 949-958.

Argyle, M. (1958). *Religious behaviour*. London: Routledge and Kegan Paul.

Argyle, M., & Beit-Hallahmi, B. (1975). *The social psychology of religion*. London: Routledge and Kegan Paul.

Argyle, M., & Crossland, J. (1987). Dimensions of positive emotions. *British Journal of Social Psychology*, *26*, 127-137.

Argyle, M., Martin, M., & Crossland, J. (1989). Happiness as a function of personality and social encounters. In J. P. Forgas and J. M. Innes (Eds.), *Recent advances in social psychology: An international perspective* (pp. 189-203). Amsterdam: Elsevier Science Publishers.

Bayani, A. A. (2008). Test-retest reliability, internal consistency, and construct validity of the Farsi version of the Oxford Happiness Inventory. *Psychology Reports, 103*, 139-144.

Beit-Hallahmi, B., & Argyle, M. (1997). *The psychology of religious belief and experience*. London: Routledge.

Bradburn, N. M. (1969). *The structure of psychological well-being*. Chicago, IL: Aldine.

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.

Crea, G., Baiocco, R., Ioverno, S., Buzzi, G., & Francis, L. J. (2014). The psychometric properties of the Italian translation of the Francis Scale of Attitude toward Christianity: A study among Catholic adolescents. *Journal of Beliefs and Values, 35*, 118-122.

Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika*, *16*, 297-334.

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.

Egan, V., Chan, S., & Shorter, G. W. (2014). The Dark Triad, happiness and subjective well-being. *Personality and Individual Differences, 67*, 17-22.

Elken A, Francis, L. J., & Robbins, M. (2010). Internal consistency reliability of the Estonian translation of the Oxford Happiness Measure: Contributing to positive psychology in Estonia. In E. E. Wells (Ed.) *Psychological wellbeing* (pp. 223-230). New York: Nova Science Publishers.

Evans, T. E., & Francis, L. J. (1996). Measuring attitude toward Christianity through the medium of Welsh. In L. J. Francis, W. K. Kay, and W. S. Campbell (Eds.), *Research in religious education* (pp. 279-294). Leominster, UK: Fowler Wright Books.

Eysenck, H. J., & Eysenck, S. B. G. (1991). *Manual of the Eysenck Personality Scales*. London, Hodder and Stoughton.

Eysenck, S. B. G., Eysenck, H. J., & Barrett, P. (1985). A revised version of the psychoticism scale. *Personality and Individual Differences*, *6*, 21-29.

Ferreira, 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, MA: Addison-Wesley.

Fisher, J. W. (2013). Relating with God contributes to variance in happiness, over that from personality and age. *Religions, 4*, 313-324.

Flere, S., L.J. Francis, & Robbins, M. (2011). The psychometric properties of the Serbian

translation of the Francis Scale of Attitude toward Christianity: A study among

Eastern Orthodox Christians. *Pastoral Psychology, 60*, 217–222.

Flere, S., R. Klanjsek, L.J. Francis, & Robbins, M. (2008). The psychometric properties of

the Slovenian translation of the Francis Scale of Attitude toward Christianity: 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. (1978a). Attitude and longitude: A study in measurement. *Character Potential*,

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. (1989). Measuring attitude towards Christianity during childhood and

adolescence. *Personality and Individual Differences*, *10*, 695-698.

Francis, L. J. (1992). Is psychoticism really a dimension of personality fundamental to

religiosity? *Personality and Individual Differences, 13*, 645-652.

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. (1999). Happiness is a thing called stable extraversion: A further examination of

the relationship between the Oxford Happiness Inventory and Eysenck's dimensional

model of personality and gender. *Personality and Individual Differences*, *26*, 5-11.

Francis, L. J., Brown, L. B., Lester, D., & Philipchalk, R. (1998). Happiness as stable

extraversion: A cross-cultural examination of the reliability and validity of the Oxford

Happiness Inventory among students in the UK, USA, Australia and Canada. *Personality and Individual Differences*, *24*, 167-171.

Francis, L. J., Brown, L. B., & Philipchalk, R. (1992). The development of an abbreviated form of the Revised Eysenck Personality Questionnaire (EPQR-A): Its use among students in England, Canada, the USA and Australia. *Personality and Individual Differences*, *13*, 443-449.

Francis, L. J., Elken, A., & Robbins, M. (2012). The affective dimension of religion and personal happiness among students in Estonia. *Journal of Research in Christian Education, 21*, 84-90.

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., Flere, S. Klanjsek, R., Williams, E., & Robbins, M. (2013). Attitude toward Christianity and New Age beliefs among undergraduate students in Slovenia: A study in implicit religion. *Mental Health, Religion and Culture, 16,* 953-963.

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., 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., 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. (2000). The internal consistency reliability and validity of the Hebrew translation of the Oxford Happiness Inventory. *Psychological Reports*, *87*, 193-196.

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., & Kwiran, M. (1999). Werthaltungen (einstellungen) gegenüber dem christentum bei deutschen heranwachsenden: Die francis-skala [Assessing attitude toward Christianity among German young people: The Francis Scale]. *Braunschweiger Beiträge, 89*, 50–54.

Francis, L. J., & Lester, D. (1997). Religion, personality and happiness. *Journal of Contemporary Religion*, *12*, 81-86.

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 toward 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., Quesnell, M., & Lewis, C.A. (2010). Personality and religion among secondary school pupils in the Czech Republic. *Research in Education, 84*, 54-64.

Francis, L. J., & Robbins, M. (2000). Religion and happiness: A study in empirical theology. *Transpersonal Psychology Review, 4*(2), 17-22.

Francis, L. J., Robbins, M., & White, A. (2003). Correlation between religion and happiness: A replication. *Psychological Reports*, *92*, 51-52.

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., Yablon, Y. B., & Robbins, M. (2014). Religion and happiness: A study among female undergraduate students in Israel. *International Journal of Jewish Education Research*, *7*, 77-92.

Francis, L. J., Ziebertz, H.-G., & Lewis, C. A. (2003). The relationship between religion and happiness among German students. *Pastoral Psychology*, *51*, 273-281.

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.

Furnham, A., & Cheng, H. (1999). Personality as predictors of mental health and happiness in the East and West. *Personality and Individual Differences*, *27*, 395-403.

Hills, P., & Argyle, M. (2002). The Oxford Happiness Questionnaire: A compact scale for the measurement of psychological well-being. *Personality and Individual Differences, 33*, 1073-1082.

Hood, R. W. Jr., Hill, P. C., & Spilka, B. (2009). *The psychology of religion: An empirical approach* (fourth edition). New York: The Guilford Press.

Joseph, S., & Lewis, C. A. (1998). The Depression-Happiness Scale: Reliability and validity of a bipolar self-report scale. *Journal of Clinical Psychology*, *54*, 537-544.

Khodarahimi, S. (2014). The role of gender on positive psychology constructs in a sample of Iranian adolescents and young adults. *Applied Research Quality Life, 9*, 45-61.

Lewis, C. A., & Cruise, S. M. (2006). Religion and happiness: Consensus, contradictions, comments and concerns. *Mental Health, Religion and Culture, 9*, 213-225.

Lewis, C. A., & Francis, L. J. (2003). Evaluer l'attitude d'étudiantes universitaires françaises à l'égard du Christianisme: L'Echelle de Francis [Assessing the attitude of French university students toward Christianity: The Francis Scale]. *Sciences Pastorals, 22*, 179–190.

Lewis, C. A., & Francis, L. J. (2014). Personality and religion among female students in France. *Psychology, Society and Education, 6*(2), 68-81.

Lewis, C. A., Francis, L. J., & Ziebertz, H.-G. (2002). The internal consistency reliability and construct validity of the German translation of the Oxford Happiness Inventory. *North American Journal of Psychology*, *4*, 211-220.

Lewis, C. A., Lanigan, C., Joseph, S., & de Fockert, J. (1997). Religiosity and happiness: No evidence for an association among undergraduates. *Personality and Individual Differences*, *22*, 119-121.

Lewis, C. A., Maltby, J., & Burkinshaw, S. (2000). Religion and happiness: Still no association. *Journal of Beliefs and Values, 21*, 232-236.

Liaghatdar, M. J., Jarfarc, E., Abedi., M. R., & Samiee, F. (2008). Reliability and validity of the Oxford Happiness Inventory among university students in Iran. *Spanish Journal of Psychology*, *11*, 310-313.

Lu, L., Gilmore, R., Kao, S. F., Weng, T. H., Hu, C. H., Chern, J. G., Huang, S. W., & Shih, J. B. (2001). Two ways to achieve happiness: When the East meets West. *Personality and Individual Differences*, *30*, 1161-1174.

Lu, L., & Lin, Y. Y. (1998). Family roles and happiness in adulthood. *Personality and individual differences*, *25*, 195-207.

Lu, L., & Shih, B. (1997). Personality and happiness: Is mental health a mediator? *Personality and Individual Differences*, *22*, 249-256.

Lu, L., Shih, J. B., Lin, Y. Y., & Ju, L.S. (1997). Personal and environmental correlates of happiness. *Personality and Individual Differences, 23*, 453-462.

Meleddu, M., Guicciardi, M., Scalas, L. F., & Fadda, D. (2012). Validation of an Italian version of the Oxford Happiness Inventory in adolescents. *Journal of Personality Assessment, 94*, 175-185.

Munayer, S. J. (2000). *The ethnic identity of Palestinian Arab Christian adolescents in Israel.* Unpublished PhD diss., University of Wales, Oxford Center for Mission Studies.

Neto, F. (2001). Personality predictors of happiness. *Psychological Reports*, *88*, 817-824.

Ok, Ü. (2011). Dini tutum ölçeği: Ölçek geliştirme ve geçerlik çalışması [Religious attitutude scale: Scale development and validation]. *Uluslararası İnsan Bilimleri Dergisi, 8*, 528-549.

Pannells, T. C., & Claxton, A. F. (2008). Happiness, creative ideation, and locus of control. *Creativity Research Journal, 20*, 67-71.

Robbins, M., & Francis, L. J. (1996). Are religious people happier? A study among undergraduates. In L. J. Francis, W. K. Kay, & W. S. Campbell (Eds.), *Research in religious education* (pp. 207-218). Leominster: Fowler Wright Books.

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.

Spilka, B., Hood, R.W., Hunsberger, B., & Gorsuch, R.L. (2003). *The psychology of religion: An empirical approach* (third edition). New York: Guilford Press.

Swindells, T., Francis, L. J., & Robbins, M. (2010). Shaping attitude toward Christianity among year seven pupils: The influence of sex, church, home and primary school. *Journal of Beliefs and Values, 311*, 343-348.

Tiliopoulos, N., & Francis, L. J. (2013). The Chinese translation of the Francis Scale of Attitude toward Christianity: Factor structure, internal consistency reliability, and construct validity among protestant Christians in Shanghai. *Pastoral Psychology*, *62*, 75–79.

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.

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 properties

Measures	N items	alpha	Mean	SD
Oxford Happiness Inventory	29	.89	63.10	11.32
Religious Attitude Scale (Islam)	8	.92	33.18	6.97
Extraversion	12	.80	7.22	3.12
Neuroticism	12	.76	7.43	2.92
Psychoticism	9	.52	2.26	2.51
Lie scale	12	.65	5.04	1.57

Table 2

Dependent OHI

Predictors	OHI	L	P	N	E	Rel
Sex	-.04	.17***	-.20***	.15**	-.00	.16**
Religious Attitude	.12*	.14**	-.39***	.09	-.07	
Exraversion (E)	.38***	-.03	.02	-.21***		
Neuroticism (N)	-.41***	-.20***	.13*			
Psychoticism (P)	-.11	-.17**				
Lie scale (L)	.17***					

Note: *, $p < .05$; **, $p < .01$; ***, $p < .001$

Table 3

Regression model

Predictors	r^2	Increase			Beta	t	p <
		r^2	F	p <			
Sex	.00	.00	0.6	NS	-0.04	-.08	NS
Extraversion (E)	.15	.15	58.8	.001	-0.03	7.03	.001
Neuroticism (N)	.26	.11	50.1	.001	-0.33	-6.57	.001
Psychoticism (P)	.26	.00	2.1	NS	0.00	0.11	NS
Lie scale (L)	.28	.01	5.8	.05	0.10	2.11	.05
Religious Attitude	.30	.02	11.0	.001	0.17	3.31	.001