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To cite this article: Leslie J. Francis & Chris J. Jackson (2003) Eysenck's dimensional model of personality and religion: Are religious people more neurotic?, *Mental Health, Religion & Culture*, 6:1, 87-100, DOI: [10.1080/1367467031000086279](https://doi.org/10.1080/1367467031000086279)

To link to this article: <http://dx.doi.org/10.1080/1367467031000086279>



Published online: 19 Aug 2010.



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Eysenck's dimensional model of personality and religion: are religious people more neurotic?

LESLIE J. FRANCIS* & CHRIS J. JACKSON†

**University of Wales, Bangor, UK;* †*University of Queensland, Australia*

ABSTRACT *The Eysenck Personality Profiler was completed by 400 undergraduate students together with the Francis Scale of Attitude toward Christianity. The data confirm the main conclusion of several previous studies by demonstrating that there is no significant relationship between the personality dimension of neuroticism and religiosity. The analyses go beyond previous studies by examining the relationships between religiosity and the seven component parts of neuroticism separately. These analyses demonstrate a significant positive correlation between religiosity and guilt, a significant negative correlation between religiosity and unhappiness, and no significant correlation between religiosity and low-self esteem, anxiety, dependency, hypochondriasis, or obsessiveness.*

Introduction

In its original form, Eysenck's dimensional model of personality argued that individual differences could be most adequately and economically expressed in terms of two higher-order dimensions characterized as extraversion and neuroticism. These two dimensions were operationalized in the Eysenck Personality Inventory (EPI). In the manual to this instrument, Eysenck and Eysenck (1964a) provide full accounts of the typical extravert and of the typical introvert, but argue that no such descriptions are required of neuroticism. The nature of this construct is apparently self-evident.

In its later form, Eysenck's dimensional model of personality added to extraversion and neuroticism the third dimension of psychoticism (Eysenck & Eysenck, 1976). These three dimensions were operationalized in the Eysenck Personality Questionnaire (EPQ). In the manual to this instrument, Eysenck and Eysenck (1975) maintain that the new neuroticism scale continues to measure precisely the same dimension of personality as the earlier instrument. In this

Correspondence to: Leslie J. Francis, Welsh National Centre for Religious Education, University of Wales, Bangor, Normal Site, Bangor, Gwynedd LL57 2PX, UK; E-mail: L.J.Francis@Bangor.ac.uk

manual they offer the following definition of the person who records high scores on the neuroticism scale as:

an anxious, worrying individual, moody and frequently depressed. He is likely to sleep badly, and to suffer from various psychosomatic disorders. He is overly emotional, reacting too strongly to all sorts of stimuli, and finds it difficult to get back on an even keel after each emotionally arousing experience. His strong emotional reactions interfere with his proper adjustment, making him react in irrational, sometimes rigid ways. If the highly neurotic individual has to be described in one word, one might say he was a *worrier*; his main characteristic is a constant preoccupation with things that might go wrong, and a strong emotional reaction to these thoughts.

More succinctly, Eysenck and Gudjonsson (1989) characterize the neurotic person as anxious, depressed, tense, irrational, shy, moody, emotional, suffering from guilt feelings, and having low self-esteem. In a more popular attempt to define neuroticism, Eysenck (1978) proposed the following definition.

Neurosis is a term we often use for behaviour which is associated with strong emotion, which is maladaptive, and which the person giving rise to it realizes is nonsensical, absurd or irrelevant, but which he is powerless to change.

The subsequent revision of the EPQ led to the Revised Eysenck Personality Questionnaire (EPQR). Once again it is maintained that the new neuroticism scale continues to measure precisely the same dimension of personality as the two earlier editions of the scale. In the manual to the instrument, Eysenck and Eysenck (1991) define neuroticism in the following terms.

We may describe the typical high N scorer as being an anxious, worrying individual, moody and frequently depressed. He is likely to sleep badly, and to suffer from various psychosomatic disorders. He is overly emotional, reacting too strongly to all sorts of stimuli, and finds it difficult to get back on an even keel after each emotionally arousing experience. His strong emotional reactions interfere with his proper adjustment, making him react in irrational, sometimes rigid ways. When combined with extraversion, such an individual is likely to be touchy and restless, to become excitable and even aggressive. If the high-N individual has to be described in one word, one might say that he was a *worrier*; his main characteristic is a constant preoccupation with things that might go wrong, and a strong emotional reaction of anxiety to these thoughts. The stable individual, on the other hand, tends to respond emotionally only slowly and generally weakly, and to return to baseline quickly after

emotional arousal; he is usually calm, even-tempered, controlled and unworried.

Two other families of tests have been developed alongside the EPI, EPQ and EPQR. The first family has been concerned with developing shorter forms of the parent instrument. These short forms include a six-item form of the MPI neuroticism scale (Eysenck, 1958), a six-item form of the EPI neuroticism scale (Eysenck & Eysenck, 1964b), a nine-item form of the EPI neuroticism scale (Floderus, 1974), a twelve-item form of the EPQR neuroticism scale (Eysenck & Eysenck, 1991) and a six-item form of the EPQR neuroticism scale (Francis *et al.*, 1992). The second family has been concerned with developing forms of the parent instrument appropriate for use among children and young people. These junior forms include the Junior Eysenck Personality Inventory (Eysenck, 1965), the Junior Eysenck Personality Questionnaire (Eysenck & Eysenck, 1975) and the short form Junior Eysenck Personality Questionnaire (Francis & Pearson, 1988a), the Revised Junior Eysenck Personality Questionnaire (Corulla, 1990) and the abbreviated form of the Revised Junior Eysenck Personality Questionnaire (Francis, 1996).

Two conflicting strands of theory in the psychology of religion lead to opposing hypotheses regarding the relationship between neuroticism and religion. One strand suggests that religion may be related to psychopathology and so leads to an hypothesized positive relationship between neuroticism scores and religiosity. Freud's classic theories on the origin of religion may be cited to support such a view (Freud, 1950). Another strand suggests that religion may promote psychological health and so leads to an hypothesized negative relationship between neuroticism scores and religiosity. Jung's classic theories on religion and individuation may be cited to support such a view (Jung, 1938).

From the classic study reported by Siegman (1963) onwards, a number of studies have examined the relationship between religiosity and one or more of the Eysenckian neuroticism scales, employing a range of measures of religion. The most systematic attempt to examine this issue has been coordinated by use of the Francis Scale of Attitude Toward Christianity in its junior (Francis, 1989) and adult forms (Francis *et al.*, 1995b). In the foundation study in this series, Francis *et al.* (1981) administered the Francis Scale of Attitude Toward Christianity alongside the Junior Eysenck Personality Questionnaire (Eysenck, 1965) to 1,088 15–16 year olds within state maintained schools in England, sampling the whole range of ability and social class. Preliminary analysis of these data revealed a significant positive correlation between scores on neuroticism and religiosity ($r=+0.10$, $P<0.001$). Although the correlation is small, it lends support to the notion that religion is associated with neuroticism. More sophisticated analysis of these data, however, revealed two other important relationships. The females in the sample obtained significantly higher scores than the males on the scale of attitude toward Christianity. This finding is consistent with a large body of research concerned with sex differences in religiosity (Francis, 1997a). The females in the sample also recorded significantly higher scores on the neuroticism

scale. This finding also is consistent with a large body of research concerned with gender differences in neuroticism (Francis, 1993a). Once sex differences were partialled out, the apparent relationship between neuroticism and religiosity disappeared, indicating that this was an artefact of sex differences.

Francis *et al.* (1983) replicated this foundation study over a wider age range, employing the Junior Eysenck Personality Questionnaire (Eysenck & Eysenck, 1975) among 1,715 young people between the ages of 11 and 17 years. Once again it was found that, after taking sex differences into account, neuroticism and religion were uncorrelated. A further replication was conducted by Francis and Pearson (1991) among 177 15 and 16 year olds, employing the neuroticism scales from each of four questionnaires: the Junior Eysenck Personality Inventory (Eysenck, 1965), the Junior Eysenck Personality Questionnaire (Eysenck & Eysenck, 1975), the Eysenck Personality Questionnaire (Eysenck & Eysenck, 1975) and the short-form Revised Eysenck Personality Questionnaire (Eysenck *et al.*, 1985). No significant relationship was found between religiosity and any of the neuroticism scales.

A number of other studies have employed the Francis Scale of Attitude toward Christianity alongside Eysenck's three-dimensional model of personality in the UK, including Robbins *et al.* (1995) among 8–11 year olds, Francis and Montgomery (1992) among 12–16 year olds, Francis and Pearson (1988b) among 15–16 year olds, Wilcox and Francis (1997) and Francis and Fearn (1999) among 16–18 year olds, Francis (1993b, 1999), Shuter-Dyson (2000), Bourke (2000) and Bourke and Francis (2000) among students, and Francis and Bennett (1992), Francis (1991) and Carter *et al.* (1996) among adults. Studies have also been conducted in Australia and Canada (Francis *et al.*, 1995a), France (Lewis & Francis, 2000), Northern Ireland (Lewis & Joseph, 1994), Republic of Ireland (Maltby & Lewis, 1997) and the USA (Lewis & Maltby, 1995). It is this family of studies that has led to the conclusion that psychoticism is the dimension of personality fundamental to individual differences in religiosity, while individual differences in religiosity remain independent of both extraversion and neuroticism. Moreover, this finding is independent of social desirability (Eysenck, 1998, 1999; Lewis, 1999, 2000a).

A second systematic strand of research has examined the relationship between Eysenck's dimensional model of personality and frequency of church attendance and frequency of personal prayer. The consensus from these studies is that both church attendance and personal prayer are independent of neuroticism. This consensus is supported by Francis and Wilcox (1994) among 230 16–18 year old female pupils, by Maltby (1995) among 92 female university students, by Francis and Wilcox (1996) among 236 16–19 year old female A-level students, by Smith (1996) among 191 boys and girls between the ages of 11 and 15 years, by Lewis and Maltby (1996) among 100 male undergraduates, by Francis *et al.* (1999) among 133 female hockey players, by Francis and Bolger (1997) among 50 retired members of an ex-civil servants association, by Francis (1997b) among three samples of 378, 458 and 292 undergraduates, by Francis and Johnson (1999) among 311 primary school teachers, by Lewis (2000b) among 462 female

French undergraduates, and by Kaldor *et al.* (2002) among 1,033 adults in a community setting.

While Eysenck's main theoretical position has concentrated on identifying the higher order factors or dimensions of personality, a second strand in Eysenck's research has also identified and discussed the major personality traits underlying the three dimensions of extraversion, neuroticism and psychoticism. This strand had its origins in the questionnaire originally proposed by Eysenck and Wilson (1975) and has been refined in the Eysenck Personality Profiler (EPP) developed by Eysenck *et al.* (1992). The EPP has identified and proposed measures of seven traits that constitute neuroticism as a dimension of personality. These traits are defined as: low self-esteem, unhappiness, anxiety, dependency, hypochondriasis, guilt, and obsessiveness. Drawing on definitions of these traits provided by Eysenck and Wilson (1975), the following picture emerges of the components of neuroticism.

Low self-esteem

People who score low on self-esteem have a low opinion of themselves, believing that they are unattractive failures. An extreme low score may be thought of as approximating to the celebrated 'inferiority complex'. High scorers tend to have plenty of confidence in themselves and their abilities. They think of themselves as worthy, useful human beings, and believe that they are well liked by other people. Without necessarily implying cockiness or conceit, it could be said that they like themselves a lot.

Unhappiness

Low scorers are characteristically pessimistic, gloomy and depressed, disappointed with their existence, and at odds with the world. High scorers are generally cheerful, optimistic, and feel well. They are satisfied with their existence, find life rewarding, and are at peace with the world.

Anxiety

High scorers are easily upset by things that go wrong and are inclined to worry unnecessarily about things that may or may not happen. Such people account for a high proportion of the consumption of minor tranquillizers like Librium and Valium. Low scorers are placid, serene, and resistant to irrational fears and anxieties.

Dependency

Low scorers lack self-reliance, think of themselves as helpless pawns of fate, are pushed around by other people and events, and show a high degree of what has been called 'authoritarian submission' – the unquestioning obedience to

institutional power. High scorers enjoy a great deal of freedom and independence, make their own decisions, view themselves as the master of their own fate, and take realistic action to solve their problems.

Hypochondriasis

Hypochondriasis measures a tendency to acquire psychosomatic symptoms and imagine that one is ill. High scorers complain of a wide variety of diffuse physical symptoms, show a great deal of concern about their state of health, and frequently demand the sympathetic attention of their doctor and their family and friends. Low scorers are very seldom ill and do not worry very much about their health. It is just possible that a high score on this scale could be obtained by an individual who is genuinely very sick physically, but the variety of symptoms sampled makes this extremely unlikely.

Guilt

High scorers are self-blaming, self-abasing and troubled by their conscience regardless of whether or not their behaviour is really morally reprehensible. Low scorers are little inclined to punish themselves or regret their past behaviour. A certain level of guilt may be appropriate for some people (indeed its complete absence is symptomatic of psychopathy) but excessive self-recrimination is usually regarded as a neurotic characteristic.

Obsessiveness

High scorers are careful, conscientious, highly disciplined, staid, finicky, and easily irritated by things that are unclean, untidy or out of place. Low scorers are casual and easy-going, with less need for order, routine or ritual. Again, the questions are selected to cover a normal range, so the scale cannot really be used to diagnose an obsessive-compulsive neurosis.

Although a relatively recent addition to the Eysenck family of instruments, a series of publications is now emerging on the application of the Eysenck Personality Profiler. For example, personality profiles have been generated on performing artists (Marchant-Haycox & Wilson, 1992), bikers (Jackson & Wilson, 1993) and physicists (Wilson & Jackson, 1994). The Eysenck Personality Profiler has been employed in studies concerned with group obsessiveness as a moderator of dissimulation (Jackson & Wilson, 1994), the relationship between personality and intelligence (Furnham *et al.*, 1998a), test taking style (Furnham *et al.*, 1998b), personality and performance correlations at work (Jackson & Corr, 1998), the relationship between personality and work motivation (Furnham *et al.*, 1999), the relationship between test taking styles and neuroticism (Jackson *et al.*, 1999), the personality profile of male Anglican clergy in Britain and Ireland (Francis *et al.*, 2000b; Francis *et al.*, 2001) and the relationship between personality and motivation and performance at work (Jackson, 2001).

Costa and McCrae (1995) explored the relationship between the 21 scales of the Eysenck Personality Profiler and their preferred five-factor solution for personality assessment. Jackson *et al.* (2000) explored the structure of the Eysenck Personality Profiler. Furnham *et al.* (2001) explored the relationship between the 21 scales of the Eysenck Personality Profiler and the Honey and Mumford Learning Styles Questionnaire (Honey & Mumford, 1982) and the Myers-Briggs Type Indicator (Myers & McCaulley, 1985). Jackson (2002) explored the relationship between the Eysenck Personality Profiler and Gray's model of personality. Muris *et al.* (2000) reported on the factor structure and validity of the Dutch Eysenck Personality Profiler. Aziz and Jackson (2001) reported on the factor structure of the Pakistani Eysenck Personality Profiler.

Against this background, the aim of the present study is to explore the relationship between the Francis Scale of Attitude Toward Christianity and the seven traits proposed by the Eysenck Personality Profiler as constituting the personality dimension of neuroticism among a sample of undergraduate students. Since the theoretical focus of this paper is concerned with neuroticism, no reference will be made to the other two major dimensions of personality accessed by the Eysenck Personality Profiler.

Method

Sample

A sample of 400 first-year-undergraduate students participated in the project during their induction into being part of a research active academic community. All students attending the induction programme agreed to participate in the project. The sample comprised 110 males and 290 females; 260 of the respondents were under the age of 20, 109 were in their twenties, and 31 were aged 30 or over. Nearly half the respondents were pursuing the BEd programme training to be teachers (47%), a further 47% were enrolled on BA programmes in the humanities and the remaining 7% were enrolled on BSc programmes. One in three of the respondents claimed no religious affiliation (33%). The largest denominational groups were Anglicans (27%), Roman Catholics (13%) and Methodists (7%). The remaining 20% identified other Christian denominations or sects. No other world faiths were represented. One in six of the respondents claimed to attend church weekly (17%), 51% claimed to attend church from time to time, and 32% claimed never to attend church.

Measures

The Francis Scale of Attitude Toward Christianity (Francis *et al.*, 1995b) is a 24-item Likert Scale concerned with affective response to God, Jesus, bible, prayer and church. Each item is answered on a five-point scale: agree strongly, agree, not certain, disagree and disagree strongly.

The Eysenck Personality Profiler (Eysenck *et al.*, 1992) is a 440-item questionnaire designed to produce 22 20-item scales. Of these scales seven relate to extraversion, seven relate to neuroticism and seven relate to psychoticism. There is also a lie scale. Each item is assessed on a three point scale: yes, no, and can't decide. The present paper draws only on the responses to the seven scales that relate to neuroticism.

Data analysis

The data were analysed by the SPSS package, using the reliability, frequency, correlation and partial correlation routines (SPSS Inc., 1988).

Results

Table 1 presents the alpha reliability coefficients (Cronbach, 1951) for the seven 20-item scales of low self-esteem, unhappiness, anxiety, dependency, hypochondriasis, guilt, and obsessiveness, as well as for the 140-item scale of neuroticism. All of these scales record a satisfactory level of internal reliability. Table 1 also presents the means and standard deviations for these scales.

The relationships between the Eysenck Personality Profiler neuroticism scales and attitude toward Christianity are explored in Table 1 in terms of the Pearson correlation coefficient and the partial correlation coefficient controlling for sex differences. These data demonstrate that there is no significant relationship between the personality dimension of neuroticism, as defined by the Eysenck Personality Profiler, and religiosity. In respect of the seven traits that comprise this dimension of personality, there is no significant relationship between religiosity and low self-esteem, anxiety, dependency, hypochondriasis, or obsessiveness. On the other hand, individuals who record higher scores on the index of religiosity also record higher scores on the index of guilt and lower scores on the index of unhappiness.

TABLE 1. Scale properties of the EPP neuroticism scales and correlations and partial correlations with attitude toward Christianity

| <i>scale</i> | <i>alpha</i> | <i>mean</i> | <i>std</i> | <i>r</i> | <i>partial r</i> |
|-----------------|--------------|-------------|------------|-----------|------------------|
| low self-esteem | 0.8869 | 21.1 | 9.8 | +0.0005 | -0.0204 |
| unhappiness | 0.9030 | 17.0 | 10.5 | -0.1221* | -0.1244* |
| anxiety | 0.8468 | 21.3 | 9.1 | +0.0358 | +0.0173 |
| dependency | 0.7368 | 15.8 | 7.2 | -0.0761 | -0.0801 |
| hypochondriasis | 0.7342 | 9.0 | 6.2 | -0.0529 | -0.0589 |
| guilt | 0.8020 | 14.2 | 7.8 | +0.2215** | +0.2401*** |
| obsessiveness | 0.7413 | 16.1 | 7.1 | +0.0951 | +0.0856 |
| neuroticism | 0.9565 | 114.4 | 45.4 | +0.0129 | +0.0042 |

Note: * = $p < 0.05$, ** = $p < 0.01$, *** = $p < 0.001$.

Conclusions

Two main conclusions emerge from these data. The first conclusion concerns the higher order personality dimension of neuroticism and the second concerns the lower order personality traits, which comprise the higher order dimension.

The first conclusion is that there is no significant relationship between attitude toward Christianity and the higher order personality dimension of neuroticism. This finding is consistent across the various measures of neuroticism proposed by Eysenck, which were discussed in the introduction to this paper and in the Eysenck Personality Profiler. In other words, taking Eysenck's definitions of neuroticism, there is no evidence to support the view that Christianity attracts the emotionally unstable or to support the view that Christianity promotes greater emotional stability. Attitude toward Christianity and neuroticism remain unrelated factors.

The second conclusion is that there is no significant relationship between attitude toward Christianity and five of the lower order personality traits identified by Eysenck as component parts of the higher order personality dimension of neuroticism, namely low self-esteem, anxiety, dependency, hypochondriasis, and obsessiveness. These findings provide further support for the broader view that Christianity is associated neither with greater predisposition toward neurotic pathology, nor with greater predisposition toward psychological stability. In this sense, support is provided neither for the negative view of religion promoted, for example, by Freud (1950) nor for the positive view of religion promoted, for example, by Jung (1938).

On the other hand, a positive attitude toward Christianity is significantly associated with higher levels of guilt and greater happiness. Both of these findings are consistent with other strands of research. Jones and Francis (2000) provide a thorough review of theory and research data linking religiosity and guilt. For example, empirical studies reported by Watson *et al.* (1988, 1989), Richards (1991) and Meek *et al.* (1995) all found a positive association between guilt and intrinsic religiosity. In a series of three studies conducted among different samples, Luyten *et al.* (1998) found a positive association between guilt and religious involvement in two of the studies, but not in the third. Another group of studies has found higher levels of guilt among seminarians and clergy in comparison with other control groups or with population norms provided by standardized instruments, including data reported by Dodson (1957), Rickner and Tan (1994) and Jones and Francis (2000).

Francis *et al.* (2000a) provide a thorough review of theory and research data linking religiosity and happiness. For example, empirical studies reported by O'Reilly (1957), Wilson (1965), Cutler (1976), Zuckerman *et al.* (1984), Reed (1991) and Ellison (1991) all found a positive association between various measures of religiosity and various measures of happiness. More recently a series of studies has consistently found a positive association between scores recorded on the Francis Scale of Attitude toward Christianity (Francis *et al.*, 1995b) and the Oxford Happiness Inventory (Argyle *et al.*, 1989) among quite diverse

samples, including data reported by Robbins and Francis (1996), Francis and Lester (1997), French and Joseph (1999), Francis *et al.* (2000a) and Francis and Robbins (2000).

What is not known at present is precisely how each of Eysenck's seven personality traits maps onto other psychological indices which employ the same descriptors. Further research is now needed to establish these relationships before the present findings can be properly located within the wider literature concerned with such specific issues as, for example, the relationship between religion and self-esteem (Jones & Francis, 1996), the relationship between religion and happiness (Francis *et al.*, 2000a), or the relationship between religion and obsessiveness (Lewis, 1996, 1998).

References

- ARGYLE, M., MARTIN, M. & CROSSLAND, J. (1989). Happiness as a function of personality and social encounters. In: FORGAS, J.P. & INNES, J.M. (Eds.) *Recent Advances in Social Psychology: An international perspective* (pp. 189–203). Amsterdam: Elsevier Science Publishers.
- AZIZ, S. & JACKSON, C.J. (2001). A comparison between three and five factor models of Pakistani personality data. *Personality and Individual Differences*, 31, 1311–1319.
- BOURKE, R. (2000). Music and spirituality: are musicians more religious. In: ASTLEY, J., HONE, T. & SAVAGE, M. (Eds.) *Creative Chords: Studies in music, theology and Christian formation* (pp. 126–140). Leominster: Gracewing.
- BOURKE, R. & FRANCIS, L.J. (2000). Personality and religion among music students. *Pastoral Psychology*, 48, 437–444.
- CARTER, M., KAY, W.K. & FRANCIS, L.J. (1996). Personality and attitude toward Christianity among committed adult Christians. *Personality and Individual Differences*, 20, 265–266.
- CORULLA, W.J. (1990). A revised version of the psychoticism scale for children. *Personality and Individual Differences*, 11, 65–76.
- COSTA, P.T. & MCCRAE, R.R. (1995). Primary traits of Eysenck's PEN system: three- and five-factor solutions. *Journal of Personality and Social Psychology*, 69, 308–317.
- CRONBACH, L.J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika*, 16, 297–334.
- CUTLER, S.J. (1976). Membership in different types of voluntary associations and psychological well-being. *The Gerontologist*, 16, 335–339.
- DODSON, F.J. (1957). Personality factors in the choice of the Protestant ministry as a vocation. Unpublished doctoral dissertation. University of Southern California.
- ELLISON, C.G. (1991). Religious involvement and subjective well-being. *Journal of Health and Social Behaviour*, 32, 80–99.
- EYSENCK, H.J. (1958). A short questionnaire for the measurement of two dimensions of personality. *Journal of Applied Psychology*, 42, 14–17.
- EYSENCK, H.J. (1978). *You and Neurosis*. Glasgow: Collins.
- EYSENCK, H.J., BARRETT, P., WILSON, G. & JACKSON, C. (1992). Primary trait measurement of the 21 components of the PEN system. *European Journal of Psychological Assessment*, 8, 109–117.
- EYSENCK, H.J. & EYSENCK, S.B.G. (1964a). *Manual of the Eysenck Personality Inventory*. London: University of London Press.
- EYSENCK, H.J. & EYSENCK, S.B.G. (1975). *Manual of the Eysenck Personality Questionnaire (adult and junior)*. London: Hodder and Stoughton.
- EYSENCK, H.J. & EYSENCK, S.B.G. (1976). *Psychoticism as a Dimension of Personality*. London: Hodder and Stoughton.

- EYSENCK, H.J. & EYSENCK, S.B.G. (1991). *Manual of the Eysenck Personality Scales*. London: Hodder and Stoughton.
- EYSENCK, H.J. & GUDJONSSON, G. (1989). *Causes and Cures of Criminality*. New York: Plenum Press.
- EYSENCK, H.J. & WILSON, G. (1975). *Know Your Own Personality*. Harmondsworth: Penguin.
- EYSENCK, M.W. (1998). Personality and the psychology of religion. *Mental Health, Religion and Culture*, 1, 11–19.
- EYSENCK, M.W. (1999). A response to Christopher Alan Lewis (1999), 'Is the relationship between religiosity and personality 'contaminated' by social desirability as assessed by the lie scale?'. *Mental Health, Religion and Culture*, 2, 115–116.
- EYSENCK, S.B.G. (1965). *Manual of the Junior Eysenck Personality Inventory*. London: University of London Press.
- EYSENCK, S.B.G. & EYSENCK, H.J. (1964b). An improved short questionnaire for the measurement of extraversion and neuroticism. *Life Sciences*, 3, 1103–1109.
- EYSENCK, S.B.G., EYSENCK, H.J. & BARRETT, P. (1985). A revised version of the psychoticism scale. *Personality and Individual Differences*, 6, 21–29.
- FLODERUS, B. (1974). Psycho-social factors in relation to coronary heart disease and associated risk factors, *Nordisk Hygienisk Tidskrift*, supplementum, 6.
- FRANCIS, L.J. (1989). Measuring attitude towards Christianity during childhood and adolescence. *Personality and Individual Differences*, 10, 695–698.
- FRANCIS, L.J. (1991). Personality and attitude towards religion among adult churchgoers in England. *Psychological Reports*, 69, 791–794.
- FRANCIS, L.J. (1993a). The dual nature of the Eysenckian neuroticism scales: a question of sex differences? *Personality and Individual Differences*, 15, 43–59.
- FRANCIS, L.J. (1993b). Personality and religion among college students in the UK. *Personality and Individual Differences*, 14, 619–622.
- FRANCIS, L.J. (1996). The development of an abbreviated form of the Revised Eysenck Personality Questionnaire (JEPQR-A) among 13–15 year olds. *Personality and Individual Differences*, 21, 835–844.
- FRANCIS, L.J. (1997a). The psychology of gender differences in religion: a review of empirical research. *Religion*, 27, 81–96.
- FRANCIS, L.J. (1997b). Personality, prayer, and church attendance among undergraduate students. *International Journal for the Psychology of Religion*, 7, 127–132.
- FRANCIS, L.J. (1999). Personality and attitude toward Christianity among undergraduates. *Journal of Research on Christian Education*, 8, 179–195.
- FRANCIS, L.J. & BENNETT, G.A. (1992). Personality and religion among female drug misusers. *Drug and Alcohol Dependence*, 30, 27–31.
- FRANCIS, L.J. & BOLGER, J. (1997). Personality and psychological well-being in later life. *Irish Journal of Psychology*, 18, 444–447.
- 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. & FEARN, M. (1999). Religion and personality: a study among A-level students. *Transpersonal Psychology Review*, 3(2), 26–30.
- FRANCIS, L.J. & JOHNSON, P. (1999). Mental Health, prayer and church attendance among primary school teachers. *Mental Health, Religion and Culture*, 2, 153–158.
- FRANCIS, L.J., JONES, S.H., JACKSON, C.J. & ROBBINS, M. (2001). The feminine personality profile of male Anglican clergy in Britain and Ireland: A study employing the Eysenck Personality Profiler. *Review of Religious Research*, 43, 14–23.
- FRANCIS, L.J., JONES, S.H. & KELLY, P. (1999). Personality and church attendance among female hockey players. *Social Behavior and Personality*, 27, 519–522.
- FRANCIS, L.J., JONES, S.H. & WILCOX, C. (2000a). Religiosity and happiness: During adolescence, young adulthood and later life. *Journal of Psychology and Christianity*, 19, 245–257.

- FRANCIS, L.J. & LESTER, D. (1997). Religion, personality and happiness. *Journal of Contemporary Religion*, 12, 81–86.
- FRANCIS, L.J., LEWIS, J.M., BROWN, L.B., PHILIPCHALK, R. & LESTER, D. (1995a). Personality and religion among undergraduate students in the United Kingdom, United States, Australia and Canada. *Journal of Psychology and Christianity*, 14, 250–262.
- FRANCIS, L.J., LEWIS, J.M., PHILIPCHALK, R., BROWN, L.B. & LESTER, D. (1995b). 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. & MONTGOMERY, A. (1992). Personality and attitudes towards Christianity among eleven to sixteen year old girls in a single sex Catholic school. *British Journal of Religious Education*, 14, 114–119.
- FRANCIS, L.J. & PEARSON, P.R. (1988a). The development of a short form of the JEPQ (JEPQ-S): Its use in measuring personality and religion. *Personality and Individual Differences*, 9, 911–916.
- FRANCIS, L.J. & PEARSON, P.R. (1988b). Religiosity and the short-scale EPQ-R indices of E, N and L, compared with the JEPI, JEPQ and EPQ. *Personality and Individual Differences*, 9, 653–657.
- FRANCIS, L.J. & PEARSON, P.R. (1991). Religiosity, gender and the two faces of neuroticism. *Irish Journal of Psychology*, 12, 60–68.
- FRANCIS, L.J., PEARSON, P.R., CARTER, M. & KAY, W.K. (1981). The relationship between neuroticism and religiosity among English 15- and 16-year olds. *Journal of Social Psychology*, 114, 99–102.
- FRANCIS, L.J., PEARSON, P.R. & KAY, W.K. (1983). Neuroticism and religiosity among English school children. *Journal of Social Psychology*, 121, 149–150.
- 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., JACKSON, C.J. & JONES, S.H. (2000b). Personality theory and male Anglican clergy: the EPP. *Contact*, 113, 27–36.
- FRANCIS, L.J. & WILCOX, C. (1994). Personality, prayer and church attendance among 16- to 18-year-old girls in England. *Journal of Social Psychology*, 134, 243–246.
- FRANCIS, L.J. & WILCOX, C. (1996). Prayer, church attendance and personality revisited: a study among 16- to 19-year old girls. *Psychological Reports*, 79, 1265–1266.
- 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.
- FREUD, S. (1950). *The Future of an Illusion*. New Haven: Yale University Press.
- FURNHAM, A., FORDE, L. & COTTER, T. (1998a). Personality and intelligence. *Personality and Individual Differences*, 24, 187–192.
- FURNHAM, A., FORDE, L. & COTTER, T. (1998b). Personality scores and test taking style. *Personality and Individual Differences*, 24, 19–23.
- FURNHAM, A., FORDE, L. & FERRARI, K. (1999). Personality and work motivation. *Personality and Individual Differences*, 26, 1035–1043.
- FURNHAM, A., JACKSON, C.J., FORDE, L. & COTTER, T. (2001). Correlates of the Eysenck Personality Profiler. *Personality and Individual Differences*, 30, 587–594.
- HONEY, P. & MUMFORD, A. (1982). *The Manual of Learning Styles*. Maidenhead: Honey Press.
- JACKSON, C.J. (2001). Comparison between Eysenck's and Gray's models of personality in the prediction of motivational work criteria. *Personality and Individual Differences*, 31, 129–144.
- JACKSON, C.J. (2002). Mapping Gray's model of personality onto the Eysenck Personality Profiler (EPP). *Personality and Individual Differences*, 32, 495–507.
- JACKSON, C.J. & CORR, P.J. (1998). Personality-performance correlations at work, individual and aggregate levels of analysis. *Personality and Individual Differences*, 24, 815–820.
- JACKSON, C.J., FURNHAM, A., FORDE, L. & COTTER, T. (2000). The structure of the Eysenck personality profiler. *British Journal of Psychology*, 91, 223–240.

- JACKSON, C.J., FURNHAM, A. & LAWTY-JONES, M. (1999). Relationships between indecisiveness and neuroticism: the moderating effect of a toughminded culture. *Personality and Individual Differences*, 27, 789–800.
- JACKSON, C.J. & WILSON, G.D. (1993). Mad, bad or sad? the personality of bikers? *Personality and Individual Differences*, 14, 241–242.
- JACKSON, C.J. & WILSON, G.D. (1994). Group obsessiveness as a moderator of dissimulation on neuroticism scales. *European Journal of Psychological Assessment*, 10, 224–228.
- JONES, S.H. & FRANCIS, L.J. (1996). Religiosity and self-esteem during childhood and adolescence. In: FRANCIS, L.J., KAY, W.K. & CAMPBELL, W.S. (Eds.) *Research in Religious Education* (pp. 189–205). Leominster: Gracewing.
- JONES, S.H. & FRANCIS, L.J. (2000). Assessing guilt among non-stipendiary Anglican clergy in Britain and Ireland: gender differences. *Pastoral Sciences*, 19, 175–189.
- JUNG, C.G. (1938). *Psychology and Religion*. New Haven: Yale University Press.
- KALDOR, P., FRANCIS, L.J. & HUGHES, P. (2002). Personality and community involvement: is churchgoing different? *Journal of Beliefs and Values*, 23, 101–105.
- LEWIS, C.A. (1996). Religiosity and obsessiveness. In: FRANCIS, L.J., KAY, W.K. & CAMPBELL, W.S. (Eds.) *Research in Religious Education* (pp. 219–227). Leominster: Gracewing.
- LEWIS, C.A. (1998). Cleanliness is next to Godliness: religiosity and obsessiveness. *Journal of Religion and Health*, 37, 49–61.
- LEWIS, C.A. (1999). Is the relationship between religiosity and personality 'contaminated' by social desirability as assessed by the lie scale? A methodological reply to Michael W. Eysenck (1998). *Mental Health, Religion and Culture*, 2, 105–114.
- LEWIS, C.A. (2000a). The religiosity-psychoticism relationship and the two factors of social desirability: A response to Michael W. Eysenck (1999). *Mental Health, Religion and Culture*, 3, 39–45.
- LEWIS, C.A. (2000b). The personality profile of the churchgoer: a study among female French undergraduates. In: FRANCIS, L.J. & KATZ, Y.J. (Eds.) *Joining and Leaving Religion: Research perspectives* (pp. 309–318). Leominster: Gracewing.
- LEWIS, C.A. & FRANCIS, L.J. (2000). Personality and religion among female university students in France. *International Journal of Psychology*, 35, 229.
- LEWIS, C.A. & JOSEPH, S. (1994). Religiosity: Psychoticism and obsessiveness in Northern Irish university students. *Personality and Individual Differences*, 17, 685–687.
- LEWIS, C.A. & MALTBY, J. (1995). Religiosity and personality among US adults. *Personality and Individual Differences*, 18, 293–295.
- LEWIS, C.A. & MALTBY, J. (1996). Personality, prayer, and church attendance in a sample of male college students in the USA. *Psychological Reports*, 78, 976–978.
- LUYTEN, P., CORVELEYN, J. & FONTAINE, J.R.J. (1998). The relationship between religiosity and mental health: Distinguishing between shame and guilt. *Mental Health, Religion and Culture*, 1, 165–184.
- MALTBY, J. (1995). Personality, prayer and church attendance among US female adults. *Journal of Social Psychology*, 135, 529–531.
- 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.
- MARCHANT-HAYCOX, S.E. & WILSON, G.D. (1992). Personality and stress in performing artists. *Personality and Individual Differences*, 13, 1061–1068.
- MEEK, K.R., ALBRIGHT, J.S. & MCMINN, M.R. (1995). Religious orientation, guilt, confession, and forgiveness. *Journal of Psychology and Theology*, 25, 190–197.
- MURIS, P., SCHMIDT, H., MERCKELBACH, H. & RASSIN, E. (2000). Reliability, factor structure and validity of the Dutch Eysenck Personality Profiler. *Personality and Individual Differences*, 29, 857–868.
- MYERS, I.B. & MCCAULLEY, M.H. (1985). *Manual: A guide to the development and use of the Myers-Briggs Type Indicator*. Palo Alto, California: Consulting Psychologists Press.

- O'REILLY, C.T. (1957). Religious practice and personal adjustment of older people. *Sociology and Social Research*, 42, 119–121.
- REED, K. (1991). Strength of religious affiliation and life satisfaction. *Sociological Analysis*, 52, 205–210.
- RICHARDS, P.S. (1991). Religious devoutness in college students: relations with emotional adjustment and psychological separation from parents. *Journal of Counselling Psychology*, 38, 189–196.
- RICKNER, R.G. & TAN, S.Y. (1994). Psychopathology, guilt, perfectionism, and family of origin functioning among Protestant clergy. *Journal of Psychology and Theology*, 22, 29–38.
- ROBBINS, M. & FRANCIS, L.J. (1996). Are religious people happier? A study among undergraduates. In: FRANCIS, L.J., KAY, W.K. & CAMPBELL, W.S. (Eds.) *Research in Religious Education* (pp. 207–217). Leominster: Gracewing.
- ROBBINS, M., FRANCIS, L.J. & GIBBS, D. (1995). Personality and religion: A study among 8–11 year olds. *Journal of Beliefs and Values*, 16(1), 1–6.
- SHUTER-DYSON, R. (2000). Profiling music students: personality and religiosity. *Psychology of Music*, 28, 190–196.
- SIEGMAN, A.W. (1963). A cross-cultural investigation of the relationship between introversion-extraversion, social attitudes and anti-social behaviour. *British Journal of Social and Clinical Psychology*, 2, 196–208.
- SMITH, D.L. (1996). Private prayer, public worship and personality among 11–15 year old adolescents. *Personality and Individual Differences*, 21, 1063–1065.
- SPSS Inc. (1988). *SPSSX User's Guide*. New York: McGraw-Hill.
- WATSON, P.J., MORRIS, R.J. & HOOD, R.W. (1988). Sin and self-functioning: Part 1, grace, guilt and self-consciousness. *Journal of Psychology and Theology*, 16, 254–269.
- WATSON, P.J., MORRIS, R.J. & HOOD, R.W. (1989). Intrinsicness, religious self-love, and narcissism. *Journal of Psychology and Christianity*, 8, 31–37.
- WILCOX, C. & FRANCIS, L.J. (1997). Personality and religion among A level religious studies students. *International Journal of Children's Spirituality*, 1(2), 48–56.
- WILSON, G.D. & JACKSON, C. (1994). The personality of physicists. *Personality and Individual Differences*, 16, 187–189.
- WILSON, W.R. (1965). Relation of sexual behaviours, values and conflicts to avowed happiness. *Psychological Reports*, 17, 371–378.
- ZUCKERMAN, D.M., KASL, S. & OSTFELD, A.M. (1984). Psychosocial predictors of mortality among the elderly poor: The role of religion, well-being and social contacts. *American Journal of Epidemiology*, 119, 410–423.