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Article Title: Prayer and psychological health: A study among sixth-form pupils attending Catholic and Protestant schools in Northern Ireland

Year of publication: 2008

Link to published version:

<http://dx.doi.org/10.1080/13674670701709055>

Publisher statement: 'This is an electronic version of an article published in Francis, L. et al. (2008). Prayer and psychological health: A study among sixth-form pupils attending Catholic and Protestant schools in Northern Ireland . Mental Health, Religion & Culture, vol. 11, pp. 85-92. Mental Health, Religion & Culture is available online at: <http://www.informaworld.com/smpp/content~content=a788555195~db=all>

Running head: Prayer and psychological health

Prayer and psychological health: A study among sixth-form pupils  
Attending Catholic and Protestant schools in Northern Ireland

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**Abstract**

Eysenck's dimensional model of personality includes two indicators of psychological health, defined as neuroticism and psychoticism. In order to examine the association between psychological health and prayer, two samples of sixth-form pupils in Northern Ireland (16- to 18-year-olds) attending Catholic (N = 1,246) and Protestant (N = 1,060) schools completed the abbreviated Revised Eysenck Personality Questionnaire alongside a simple measure of prayer frequency. The data demonstrated a positive association between prayer frequency and better levels of psychological health as assessed by Eysenck's notion of psychoticism. Among pupils attending both Catholic and Protestant schools higher levels of prayer were associated with lower psychoticism scores. Among pupils attending Catholic schools, however, higher levels of prayer were also associated with higher neuroticism scores.

**Prayer and psychological health: A study among sixth-form pupils  
attending Catholic and Protestant schools in Northern Ireland**

Reviews of empirical research concerning the relationship between prayer and psychological health draw attention to two key problems regarding the interpretation of this literature (Francis & Astley, 2001). The first problem concerns the issue of causality. Since almost all the empirical evidence has been derived from correlational studies, the question remains relatively open regarding the direction of the influence. The second problem concerns the issue of definition and measurement. Psychological health itself is far from a simple construct to operationalise. Studies which discuss aspects of the association between prayer and psychological health often (by necessity) focus on more restricted and more specialised constructs, including notions like quality of life or psychological well-being (Poloma & Pendleton, 1991), self concept or self-esteem (Francis & Gibbs, 1996), and purpose in life (Francis, 2005a; Francis & Robbins, 2006).

One potentially powerful way for operationalising the notion of psychological health is provided by Eysenck's dimensional model of personality, as operationalised through instruments like the Eysenck Personality Questionnaire (Eysenck & Eysenck, 1975), the Revised Eysenck Personality Questionnaire (Eysenck, Eysenck, & Barrett, 1985) and the Eysenck Personality Scales (Eysenck & Eysenck, 1991). This model maintains that abnormal personality (poor functional psychological health) is not discrete from, but continuous with normal personality (good functional psychological health). Accordingly neurotic disorders lie at one extreme of a dimension of normal personality, ranging from emotional stability, through emotional lability, to neurotic disorder. Similarly, psychotic disorders lie at one extreme of another dimension of normal personality, ranging from tendermindedness, through toughmindedness, to psychotic disorder. Eysenck's model also maintains that the two

dimensions of neuroticism and psychoticism are orthogonal and independent of each other. Alongside the measures of neuroticism and psychoticism, Eysenck's model adds a third dimension of personality which is not itself concerned with psychological disorder. This third dimension ranges from introversion, through ambiversion, to extraversion. Eysenck's questionnaires designed to measure these three dimensions of personality also routinely include a lie scale.

Since the mid-1990s a series of studies has explored the association between self-reported frequency of prayer and scores recorded on the two Eysenckian dimensions of psychoticism and neuroticism. Among broadly-based samples, comprising both religious and non-religious respondents, the general consensus has emerged that higher frequency of prayer is associated with lower psychoticism scores, which may be interpreted as indicative of better levels of psychological health. This consensus is supported by data from the United Kingdom reported by Francis and Wilcox (1994) among 230 16- to 18-year-old female school pupils, by Francis and Wilcox (1996) among 236 16- to 19-year-old female A-level students, by Smith (1996) among 191 11- to 15-year-old school pupils, by Francis and Bolger (1997) among 50 retired members of an ex-civil servants association, by Francis (1997) among three samples of 378, 458, and 292 undergraduates, by Francis and Johnson (1999) among 311 primary school teachers, and by Fearn, Booker, and Francis (2001) among 157 adult artists. This consensus is also supported by data from the United States of America reported by Maltby (1995) among 92 female university students, by Lewis and Maltby (1996) among 100 male undergraduates, and by Maltby, Talley, Cooper, and Leslie (1995) among 324 adults, by data from France by Lewis (2000) among 462 female university students, by data from Australia by Kaldor, Francis, and Fisher (2002) among 1,033 adults, and by data from Norway by Lewis, Francis, and Enger (2004) among 479 school pupils.

The aim of the present study is to test these findings in the highly religious culture of

Northern Ireland. For example, Brierley (2003, p. 2.21) calculated church membership for 2002 as representing 55.9% of the population in Northern Ireland, compared with 17.4% in Scotland, 8.2% in Wales and 7.2% in England. A more dated but fuller picture is provided by Greeley (1992) drawing on the British Social Attitudes Survey data. According to this analysis 95% of people in Northern Ireland believed in God, compared with 69% in Britain; 90% in Northern Ireland believed in heaven, compared with 54% in Britain; 69% in Northern Ireland believed in hell, compared with 28% in Britain; 81% in Northern Ireland believed that the Bible was the actual or inspired word of God, compared with 44% in Britain. In Northern Ireland 58% of the population attended church services at least twice a month, compared with 16% in Britain. Not only is Northern Ireland a country characterised by high levels of religious affiliation, practice and belief, it remains a country deeply divided between two distinctive and opposed religious communities of Protestants and Catholics (Cairns & Darby, 1998). This division is reflected in, and to some extent perpetuated by, a divided educational system according to which the majority of pupils attend either Catholic or Protestant schools.

Research concerned with the associations between aspects of religiosity and the Eysenckian dimensions of personality needs to be aware of and to take into account the established sex differences reported by these variables according to which females generally record higher scores than males on indices of religiosity (Francis, 1997b) and on the neuroticism scales (Francis, 1993), while males generally record higher scores than females on the psychoticism scales (Eysenck & Eysenck, 1976). For example, an early paper by Francis, Pearson, Carter, and Kay (1981) found that the positive association between religiosity and neuroticism within their data vanished after controlling for sex differences.

## **Method**

### *Sample*

Data on the two measures of prayer and psychological health were provided by a total of 2,306 pupils, 1,060 of whom were attending Protestant schools (681 males and 379 females) and 1,246 of whom were attending Catholic schools (480 males and 766 females).

### *Measures*

*Prayer* frequency was assessed by the simple question “Do you pray on your own?” rated on a three point scale: daily, sometimes, and never.

*Psychological health* was assessed by the abbreviated form of the Revised Eysenck Personality Questionnaire (EPQR-A: Francis, Brown, & Philipchalk, 1992). This instrument proposes four 6-item measures of extraversion, neuroticism, psychoticism, and the lie scale. Each item is assessed on a dichotomous scale: *yes* and *no*. On each measure scores can range between 0 and 6. The scale properties of this instrument have been supported in Northern Ireland by Forrest, Lewis, and Shevlin (2000) and Shevlin, Bailey, and Adamson (2002).

### *Procedure*

Staff within a random sample of seven Protestant and nine Catholic secondary schools were invited to administer the research instrument to their lower and upper sixth form pupils (aged between 16 and 18 years). The questionnaires were administered by teachers according to a standardised procedure, emphasising confidentiality and anonymity and with the assurance that the responses would not be inspected by school staff. Although given the option not to participate in the project, very few pupils refrained from participation.

## **Results**

In the Protestant schools, 23% of pupils prayed daily, 46% prayed sometimes, and 31% never prayed. In the Catholic schools, 29% of pupils prayed daily, 55% prayed

sometimes and 16% never prayed.

Table 1 presents the scale properties of the four Eysenckian scales in terms of the

- insert table 1 about here -

alpha coefficients and the mean scores for males and for females, for the two school systems separately. These data demonstrate that among both communities, the extraversion scale and the neuroticism scale reached satisfactory levels of internal consistency reliability (DeVellis, 2003), although the performance of the psychoticism scale was less satisfactory but consistent with recognised difficulties in operationalising the construct (Francis, Brown, & Philipchalk, 1992). In terms of the two major dimensions of neuroticism and psychoticism, the expected sex differences were found, with females recording significantly higher scores than males on the neuroticism scale (Francis, 1993) and with males recording significantly higher scores than females on the psychoticism scale (Eysenck & Eysenck, 1976).

Table 2 presents the Pearson correlations and the partial correlations controlling for

- insert table 2 about here -

sex between prayer and the four Eysenckian scales, separately for pupils attending Catholic schools and for pupils attending Protestant schools. The key finding from these data is that among both samples of pupils there is a significant negative correlation between prayer frequency and psychoticism scores. Additionally, among the pupils attending Catholic schools there is also a significant positive correlation between prayer frequency and neuroticism scores. These significant associations were not changed by controlling additionally for lie scale scores.

### **Conclusion**

The present study set out to examine the relationship between prayer frequency and psychological health among two samples of sixth-form pupils in Northern Ireland, assessing

psychological health by means of the Eysenckian dimensional model of personality. Data from this highly religious culture confirmed the main finding reviewed above, gathered from other cultural contexts, that higher levels of prayer are associated with lower psychoticism scores. In other words, according to the Eysenckian definition of this personality construct, as originally shaped by Eysenck and Eysenck (1976), pupils who prayed more frequently displayed fewer precursors to psychotic disorder. This finding holds good for pupils from both religious communities, Catholic and Protestant.

At the same time, the present study also generated an unexpected finding, inconsistent with the general findings from earlier research, namely that among pupils associated with the Catholic community higher levels of prayer were associated with higher neuroticism scores. In other words, according to the Eysenckian definition of the personality construct, as defined by Eysenck and Eysenck (1975), pupils from the Catholic community who prayed more frequently displayed more precursors to neurotic disorder. This unexpected finding requires further examination by means of the replication of the present study among other samples of pupils attending Catholic schools in Northern Ireland.

Given the fact that these findings were derived from correlational studies, the issue of establishing causality remains problematic. Two rather different approaches can be offered to provide coherent theories for the direction of causality in the relationship between personality and prayer, one grounded in the framework of personality psychology and the other grounded in the framework of empirical theology. Working within the framework of Eysenckian personality theory, priority is given to the effects of individual differences in personality shaping the religious response. Two different accounts exist regarding the psychological mechanism underpinning the influence of psychoticism on religiosity in general. One account is rooted in Eysenck's classic theory regarding the association between low psychoticism, conditionality and tenderminded social attitudes (Eysenck, 1975, 1976). This theory was

assessed and favoured by Francis (1992) locating religiosity within the domain of tenderminded social attitudes. The second account is rooted in Thompson's classic theory regarding the association between psychological femininity and religiosity (Thompson, 1991). This theory was assessed and favoured by Francis (2005b), linking low psychoticism with psychological femininity.

On the other hand, working within the framework of empirical theology, priority is given to the effects of individual differences in prayer shaping psychological health as defined by lower psychoticism scores (Francis, 2005a). Francis and Robbins (2006) proposed the following psychological mechanism underpinning such causation, centred on the intervening variable of purpose in life. According to this account, individuals who pray are, consciously or unconsciously, acknowledging and relating to a transcendence beyond themselves. Acknowledging such a transcendence and relating to that transcendence through prayer places the whole of life into a wider context of meaning and purpose. Furthermore, the practice of prayer implies both a cognitive and an affective component. The cognitive component assumes at least the possibility, if not the certainty, of a transcendent power. Such a belief system is likely to support a purposive view of the nature of the universe. Living in a universe which itself has meaning and purpose is likely to lend a sense of meaning and purpose to the individual who is part of that universe. The affective component assumes at least the possibility, if not the certainty, of that transcendent power being aware of and taking an interest in the individual engaged in prayer. The affective component supports the relational potential of a personal rather than an impersonal transcendent power. Living in relationship to such a personal transcendence is likely to support a sense of value and purpose for the individual. In turn a considerable body of recent research, reviewed by Francis and Robbins (2006), has demonstrated the linkage between purpose in life and enhanced well-being or psychological health.

Future research building on this study needs to be able to address its three main limitations. The first limitation concerns the poor performance of the psychoticism scale. Future research might be advised to employ longer versions of the Eysenckian scale. The second limitation concerns the crude measurement of prayer in terms of frequency defined by just three steps. Future research might be advised to employ better nuanced indices of prayer. The third limitation concerns the restricted nature of the sample to 16- to 18-year-old pupils. Future research might be advised to employ samples more representative of the adult population.

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**Table 1: Eysenck's personality dimensions for Catholic and Protestant pupils separately**

	alpha	male		female		t	P<
		mean	sd	mean	sd		
<i>Catholic</i>							
Extraversion	.81	4.08	1.97	4.75	1.70	6.4	.001
Neuroticism	.66	3.23	1.70	3.64	1.63	4.2	.001
Psychoticism	.40	2.08	1.29	1.72	1.22	4.9	.001
Lie scale	.54	1.15	1.29	1.39	1.35	3.1	.01
<i>Protestant</i>							
Extraversion	.80	4.03	2.00	4.42	1.79	3.2	.001
Neuroticism	.69	3.16	1.77	3.68	1.54	4.8	.001
Psychoticism	.45	1.93	1.34	1.57	1.21	4.3	.001
Lie scale	.59	1.32	1.39	1.55	1.46	2.6	.01

**Table 2: Correlation and partial correlation matrices for Catholic and Protestant pupils separately**

	Catholic pupils				Protestant pupils			
	prayer	L	P	N	prayer	L	P	N
<i>Correlations</i>								
Extraversion (E)	.04	-.07*	.05	-.17**	.03	-.05	.12***	-.17***
Neuroticism (N)	.11***	-.11***	-.17***		.05	-.14***	-.10**	
Psychoticism (P)	-.22***	-.10***			-.19***	-.08**		
Lie scale (L)	.01				-.04			
<i>Partial correlations controlling for sex</i>								
Extraversion (E)	.02	-.08**	.07**	-.20***	.01	-.06	.13	-.19***
Neuroticism (N)	.09***	-.13***	-.16***		.01	-.15***	-.08**	
Psychoticism (P)	-.21***	-.09***			-.16***	-.07*		
Lie scale (L)	.00				-.06			

Note: \* =  $p < .05$ ; \*\* =  $p < .01$ ; \*\*\* =  $p < .001$