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Measuring attitude toward theistic faith: assessing the Astley-Francis Scale among Christian,  
Muslim and secular youth in England.

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**Abstract**

Alongside a family of instruments designed to measure the attitudinal dimension of religion within specific faith contexts (Christianity, Hinduism, Islam, and Judaism), the Astley-Francis Scale of Attitude toward Theistic Faith was designed to assess the attitudinal dimension of religion within a multifaith context. Drawing on a sample of 4338 pupils attending schools in three areas of northern England, the present study supported the internal consistency reliability and construct validity of this instrument among four groups of pupils defined by self-assigned religious officiation: No religion (N = 1367), Christian (N = 1984), Muslim (N = 817), and other religion (N = 126). On the basis of these data, the Astley-Francis Scale of Attitude toward Theistic Faith was commended for further use in such multifaith contexts.

*Keywords:* measurement, psychology, religion, Muslim, Christian

### **Introduction**

Empirical research within the social scientific study of religion in general and within the psychology of religion in particular remains very conscious of the complex nature of its subject matter. Empirical research in this field needs to take cognisance of the many forms in which religion is expressed (say, Buddhism, Christianity, Hinduism, Islam, Judaism, and Sikhism) and the many facets within the forms (say, beliefs, behaviours, and affiliation). Working in the 1970s Francis (1978a, 1978b) advanced the view that the attitudinal dimension of religion offered a particularly fruitful basis for coordinating empirical enquiry into the correlates, antecedents, and consequences of religiosity across the life span.

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

While the sophistication with which beliefs are formulated and tested clearly develops over the life span (see, for example, Fowler, 1981), attitudinal statements concerned with positive and negative affect can be formulated in ways which are equally acceptable during childhood, adolescence and adulthood (Francis, 1989; Francis & Stubbs, 1987).

Against this background, Francis (1978a, 1978b) proposed a 24-item Likert scale, introduced as the Francis Scale of Attitude toward Christianity, and designed for application in Christian and post-Christian cultural settings. This instrument contained both negative and positive items concerned with affective responses to five components of the Christian faith accessible to and recognised by both children and adults, namely God, Jesus, Bible, prayer and church. The English language form of this instrument has been tested in a number of contexts, including Australia and Canada (Francis, Lewis, Philipchalk, Brown, & Lester, 1995), England (Lewis, Cruise, & Lattimer, 2007), Kenya (Fulljames & Francis, 1987), Nigeria (Francis & McCarron, 1989), Northern Ireland (Lewis & Maltby, 1997), Republic of Ireland (Maltby, 1994), Scotland (Gibson & Francis, 1989), South Africa (Francis, Kerr, & Lewis, 2005), and the United States of America (Lewis & Maltby, 1995). Although scales of around 24 items are not generally problematic to administer, they can prove to be cumbersome when time is particularly restricted or when there is a large number of other instruments to include within one questionnaire survey. It is for this reason that, in addition to the full 24-item form of the Francis Scale of Attitude toward Christianity, a seven-item short form has been developed and tested among primary school pupils (Francis, 1992), secondary school pupils (Francis, Greer, & Gibson, 1991) and adults (Francis, 1993; Francis, Lewis, Philipchalk, Lester, & Brown, 1995; Maltby & Lewis, 1997; Lewis, Shevlin, Lloyd, & Adamson, 1998; Adamson, Shevlin, Lloyd, & Lewis, 2000; Lewis, Cruise, & McGuckin, 2005).

The Francis scale of Attitude toward Christianity has also been translated into other

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

By the mid 1990s over one hundred independent studies had employed this scale to examine a wide range of correlates of religiosity during childhood, adolescence and adulthood. These studies were summarised and synthesised by Kay and Francis (1996). Since the 1990s the scale has been employed in further studies exploring the correlates of religiosity, including: abortion attitudes (Fawcett, Andrews, & Lester, 2000); alcohol attitudes (Francis, Fearn, & Lewis, 2005), altruism (Eckert & Lester, 1997); conservatism (Lewis & Maltby, 2000); dissociation (Dorahy & Lewis, 2001); dogmatism (Francis, 2001; Francis & Robbins, 2003); gender orientation (Francis & Wilcox, 1996, 1998; Francis, 2005); general health (Francis, Robbins, Lewis, Quigley, & Wheeler, 2004); intelligence (Francis, 1998); obsessionality (Lewis, 1996; Maltby, 1997); paranormal belief (Williams, Francis, & Robbins, 2006); prosocial values (Schludermann, Schludermann, & Huynh, 2000); psychological adjustment (Schludermann, Schludermann, Needham, & Mulenga, 2001); psychological health (Francis & Burton, 2007; Francis, Robbins, ap Siôn, Lewis, & Barnes,

2007); psychological wellbeing (Francis, Hills, Schludermann, & Schludemann, 2008); purpose in life (French & Joseph, 1999); and science attitudes (Francis & Greer, 2001).

The strength of this research tradition concerns the way in which it has enabled an empirically-based body of knowledge to be constructed from a number of independent studies agreed as a common measure of religiosity. The weakness of this research tradition concerns the way in which it has been restricted to the Christian tradition. In response to the burgeoning interest in an Islamic empirically-based approach to the psychology of religion, two attempts have been made to translate the principles underlying the Francis Scale of Attitude into an Islamic context.

In the first of these attempts, Sahin and Francis (2002) invited several Muslim Scholars of Islam to scrutinize and debate the items of the Francis Scale of Attitude toward Christianity until agreement was reached on 23 Islam-related items which mapped closely onto the area assessed by the parent instrument. The psychometric properties of the new instrument 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), among 309 Balinese Hindus (Tilopoulos, Francis, & Slattery, 2010), among 114 adult Muslims from 18 countries recruited through an email sent to university Islamic student organisations, mainly in Britain, but also in the USA and the Arab world (Johnstone & Tiliopoulos 2008) and among 150 English speaking Pakistani university students (Khan & Walton, 2006).

In the second of these attempts, Abu-Rayya and Abu Rayya (2009) undertook the Arabic translation and Islamic modification of the seven-item Short form of the Francis Scale of attitude toward Christianity. The psychometric properties of the new instrument were assessed on 443 Arab Muslims attending high schools and colleges in Israel.

The strategy adopted by Sahin and Francis (2002) and by Abu-Rayya and Abu-Rayya

is consistent with Francis' original strategy that operationalises the attitudinal dimension of religion formally within a specific faith tradition. Providing that the underlying construct is operationalised in similar ways by similar instruments grounded in different faith traditions, it is reasonable to set the findings of these different instruments side by side. In a recent study, however, Astley, Francis and Robbins (2012) proposed a different (and possibly more elegant) solution to the same problem. In the development of the Astley-Francis Scale of Attitude toward Theistic Faith, they suggested that the same set of items should make it possible to access the attitudinal dimension of religion across the major theistic faith traditions. Building on the short seven-item form of the Francis Scale of Attitude toward Christianity, Astley, Francis and Robbins (2012) identified seven items concerned with affective responses to God, places of worship, and prayer that they regarded as conceptually appropriate within an Islamic context, or a multifaith context. The psychometric properties of the new instruments were assessed on a sample of 284 16- to 18-year-old students in England.

Against this background, the aim of the present paper is to undertake a more rigorous testing of the Astley-Francis Scale of Attitude toward Theistic Faith among separate samples of Christian, Muslim and secular youth by administering the instrument in areas of England in which three groups were clearly visible.

## **Method**

### **Sample and variables**

Questionnaires were administered by class teachers during normal school activities to pupils between the ages of 11 and 16 years during 2007 and 2008 in three areas of northern England: Blackburn, Kirklees and York. All pupils were assured of anonymity and confidentiality, and given the opportunity to opt out of the survey. Response rates were high, and nearly all pupils agreed to complete the questionnaire. Of 4,353 valid responses, 31.9%



were 'no religion', 46.1% were 'Christian', 19.1% were 'Muslim' and 3.0% were 'other religion'.

The questionnaire included the Astley-Francis Scale of Attitude toward Theistic Faith, based on seven Likert-type items (Table 1) with a five-point response scale ranging from 'strongly agree' to 'strongly disagree'. Items were scored such that a high score indicated a high level of theistic belief. Analysis was confined to the 4,338 students who gave valid answers to each item on the scale.

The questionnaire also included items measuring religious behaviour and on the one item measuring the importance of religion. Public religious practice was accessed by the question, '*How often do you choose to attend a service of prayers at a place of worship (e.g. church, mosque, temple)?*', scored on an eight-point scale from 'never' to 'every day'. Personal religious practice was accessed by the question, '*How often do you choose to pray?*', scored on a seven-point scale from 'never' to 'five times a day'. Importance of religion was accessed by the question, '*My religion is the most important thing in my life*', scored on a five-point scale from 'strongly disagree' to 'strongly agree'.

### **Analysis**

Reliability was tested first by factor analysis, using principal components extraction and varimax rotation, then by calculating Cronbach's alpha coefficient. Scores of individual items were summed to give a measure of theistic belief, with a high score indicating strong belief. Construct validity across the sample was tested by comparing the scores of pupils who registered some religious affiliation with those who registered none, and by correlating scores with frequency of attendance at services and frequency of prayer. Correlations were repeated for four different categories of religious affiliation.

### **Results**

For the overall data, the unrotated principle components analysis extracted a single factor based on all seven items, which explained 79.5% of the total variance. Factor loadings of individual items were high, ranging from .81 to .95 (Table 1). The alpha coefficient was .96, and item rest of test correlations were also high, ranging from .75 to .92. These results indicate that the items formed a scale with high internal consistency reliability. The second step in the data analysis repeated these calculations (principle components analysis and item rest of test correlations) for four separate groups of the pupils according to their self-assigned religious affiliation: no religion ( $N = 1367$ ), Christian ( $N = 1984$ ), Muslim ( $N = 817$ ), and other religion ( $N = 126$ ). The statistics presented in table 1 demonstrate that among all four groups the instrument records acceptable internal consistency reliability. Well in excess of the threshold of .65 recommended by DeVellis (2003). Nevertheless the performance reported among the Muslim pupils is less satisfactory than the performance.

Scores for the seven items were summed to give an index of theistic belief. For the total sample, the average index score was 21.1 ( $SD = 8.8$ , median = 21.0). Construct validity was first explored by comparing the mean scale scores recorded by those who reported religious affiliation. The data demonstrated that mean index scores were higher for pupils who indicated a religious affiliation (24.6,  $SD = 7.9$ ,  $n = 2927$ ) than those who did not (13.7,  $SD = 5.5$ ,  $n = 1367$ ,  $t = 46.2$ ,  $df = 4292$ ,  $p < 0.001$ ). Construct validity was also explored by examining the correlations with public religious practice, with personal religious practice, and with self-perceived importance of religion. The index was also positively correlated with frequency of attending services ( $r = .70$ ,  $df = 4337$ ,  $p < 0.001$ ), with the frequency of prayer ( $r = .74$ ,  $df = 4337$ ,  $p < 0.001$ ), and with the importance of religion ( $r = .80$ ,  $df = 4304$ ,  $p < 0.001$ ). All of these results indicate that the index had high construct validity as a scale measuring strength of theistic belief across the pooled sample.

Table 2 shows correlations within groups of pupils according to their self-assigned religious affiliation. The correlations remained positive and highly statistically significant, even in the small group of 'other religion', suggesting that the scale is able to measure attitude toward theistic belief across a wide range of different religions.

### **Conclusion**

The present study set out to test the Astley-Francis Scale of Attitude toward Theistic Faith among separate samples of Christian, Muslim, and secular youth. The data demonstrated satisfactory levels of internal consistency reliability and construct validity among these three groups, and additionally among young people affiliated with other religions. At the same time, however, the data demonstrated a lower (although far from unacceptable) alpha coefficient among the Muslim youth, due largely to the performance of the negatively phrased items among this group. Three main conclusions emerge from these findings.

First, the problem with the negatively phrased items among the Muslim respondents, is not confined to the present scale. A similar pattern was associated with the negative items in the longer Sahin-Francis Scale of Attitude toward Islam reported in previous studies. The Muslim respondent is reluctant to agree with items that may appear disrespectful to faith. This phenomenon raises questions regarding one of the established tenets of good psychometric scale construction that employs negatively phrased items to counter the danger of response setting.

Second, the fact that the Astley-Francis Scale of Attitude toward Theistic Faith behaves (slightly) differently among different groups goes some way to supporting the view that there continue to be advantages in employing the religion-specific instruments in contexts where that is sensible: the Francis Scale of Attitude toward Christianity in

predominantly Christian or post Christian contexts, the Katz-Francis Scale of Attitude toward Judaism in predominantly Jewish contexts, and so on.

Third, the fact that the Astley-Francis Scale of Attitude toward Theistic Faith behaves with acceptable levels of internal consistency reliability and construct validity among samples of different religious affiliation (none, Christian, Muslim, and other religions) commends the instrument for use in multi faith contexts. Clearly in a survey like the one reported in the present paper, conducted in schools that cater for young people from a variety of faith and secular backgrounds, it would be cumbersome, disruptive and even counter-productive to issue different versions of the research instrument to different self-defined subgroups. It is in this context that the Astley-Francis Scale of Attitude toward Theistic Faith makes its major contribution alongside other instruments developed within the same family of measures.

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Table 1.

*Item rest of test and factor loadings: The Astley-Francis Scale of Attitude toward Theistic Belief.*

	No religion		Christian		Muslim		Other		All	
	FL	IRC	FL	IRC	FL	IRC	FL	IRC	FL	IRC
God means a lot to me	.89	.80	.90	.86	.78	.63	.92	.88	.95	.92
God helps me	.89	.81	.89	.84	.84	.70	.90	.85	.94	.91
God helps me to lead a better life	.89	.80	.89	.83	.78	.62	.92	.87	.93	.91
I know that God is very close to me	.87	.78	.87	.81	.70	.53	.93	.88	.91	.87
Prayer helps me a lot	.73	.62	.81	.74	.63	.45	.77	.68	.88	.83
I find it hard to believe in God*	.51	.43	.76	.68	.29	.20	.73	.66	.82	.76
I think going to a place of worship is a waste of my time*	.57	.48	.72	.64	.52	.39	.67	.59	.81	.75
Cronbach's alpha =		.88		.93		.77		.93		.96

Note. FL= Factor loadings for unrotated principle component matrix;

IRC = Item rest of test correlations.

\* These items were reverse coded.

N = No religion, 1367; Christian 1984; Muslim 817; Other 126; All 4338

Table 2

*Correlations between the Astley-Francis Scale of Attitude toward Theistic Belief and measures of religious practice and importance*

	No religion	Christian	Muslim	Other	All
Attendance	.09***	.50***	.18***	.40***	.70***
Prayer	.17***	.63***	.28***	.40***	.74***
Religion important	.17***	.66***	.41***	.52***	.80***

Note \*\*\*  $p < .001$

N = No religion, 1367; Christian 1984; Muslim 817; Other 126; All 4338