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Internal consistency reliability and construct validity of the Astley-Francis Scale of Attitude toward Theistic Faith among religiously unaffiliated Christian and Muslim youth in the UK

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Abstract

This study examines the psychometric properties of the Astley-Francis Scale of Attitude toward Theistic Faith among a sample of 10,678 13- to 15-year-old students from across the United Kingdom, exploring the performance of the scale independently among three groups: religiously unaffiliated students ($N = 3,711$), Christian students ($N = 6,649$), and Muslim students ($N = 318$). The data support the internal consistency reliability and the construct validity of this instrument among all three groups and commend it for application in further studies.

Keywords: attitude, theistic faith, psychometrics, religion

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).

Francis (1978a, 1978b) argued that the attitudinal dimension of religion was best operationalised and assessed within specific religious traditions. Francis tested this view within the Christian tradition by proposing the Francis Scale of Attitude toward Christianity intended 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. For example, Francis, Lewis, Philipchalk, Brown, and Lester (1995) reported on the internal consistency reliability and construct validity of this instrument among 255 students in Australia, 231 students in Canada, 212 students in the USA, and 378 students in the UK.

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).

In order to extend this research tradition among other religions, Francis and

colleagues developed a series of comparable instruments, building on the Francis Scale of Attitude toward Christianity. In the first study in this series, Sahin and Francis (2002) reported the development of the Sahin-Francis Scale of Attitude toward Islam. The items of the Francis Scale of Attitude toward Christianity were carefully scrutinised and debated by several Muslim scholars of Islam until agreement was reached on 23 Islam-related items which mapped closely onto the area assessed by the parent instrument. The psychometric properties of the new instrument of the Sahin-Francis Scale of Attitude toward Islam 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 a sample of 150 students in Pakistan (Khan & Watson, 2006), among a sample of 174 students in Pakistan (Musharraf, Lewis, & Sutton, 2014), and among 189 Sunni students in Malaysia (Francis, Tekke, & Robbins, in press).

In the second study in the series, Francis and Katz (2007) reported the development of the Katz-Francis Scale of Attitude toward Judaism. In this case the 24 items of the Francis Scale of Attitude toward Christianity were recast in ways accessible for Hebrew-speaking Jews living in Israel. The psychometric properties of the instrument were assessed on a sample of 618 Hebrew-speaking undergraduate students attending Bar-Ilan University. Subsequently this instrument was tested among a sample of 284 Hebrew-speaking female students at Bar-Ilan University (Yablon, Francis, & Robbins, 2014) and among a sample of 101 Australian Jews (Lumbroso, Fayn, Tiliopoulos, & Francis, in press).

In the third study in the series, Francis, Santosh, Robbins, and Vij (2008) reported on the development of the Santosh-Francis Scale of Attitude toward Hinduism. 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), among a sample of 309 Balinese Hindus (Lesmana, Tiliopoulos, & Francis, 2011), and among 149 students in India (Francis, Kamble, & Robbins, in press).

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 a Christian context, an Islamic context, and a post-Christian context. The psychometric properties of the new instruments were assessed on a sample of 284 16- to 18-year-old students in England.

In a subsequent study, Francis, Brockett, and Village (2013) undertook 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. In this study data were provided by 4,353 students between the ages of 11 and 16 years attending schools in three areas of northern England: Blackburn, Kirklees, and York, among whom 1,367 were 'no religion', 1,984 were 'Christian', 817 were 'Muslim', 126 were 'other religion', and the remaining 59 had failed to answer the religious affiliation question. Francis, Brockett, and Village (2013)

reported three separate analyses among the religiously unaffiliated, the Christian, and the Muslim participants. The instrument performed well among all three groups, reporting alpha coefficients of .93 among the Christians, .88 among the religiously unaffiliated, and .77 among the Muslims. The lower alpha coefficient among the Muslims was largely a consequence of the two negatively phrased items.

Against this background, the aim of the present paper is to replicate the analyses reported by Francis, Brockett, and Village (2013) on data available from the Young People's Attitude to Religious Diversity Project (see Francis, Croft, Pyke, & Robbins, 2012), a study conducted among nearly 12,000 young people from across the four nations of the UK.

Method

Procedure

The Young People's Attitude to Religious Diversity Project set out to obtain responses from at least 2,000 13- to 15-year-old students attending state-maintained schools in each of five parts of the UK: England, Northern Ireland, Scotland, Wales *and* London. In each nation half of the students were recruited from schools with a religious character (Anglican, Catholic, or joint Anglican and Catholic) and half from schools without a religious character. Within the participating schools, questionnaires were administered by religious education teachers under examination-like conditions. Students were assured of anonymity and confidentiality and given the option not to participate in the project.

Participants

The present analyses were conducted on a sub-sample from the Young People's Attitude to Religious Diversity Project, drawing on information provided by 10,678 students from schools in England, Northern Ireland, Scotland, Wales and London who self identified as either 'no religion', as Christian, or as Muslim and who had also completed the section of the survey including the Astley-Francis Scale of Attitude toward Theistic Faith. In terms of

sex and age, 47% were male and 53% were female; 51% were in year nine and 49% were in year ten. In terms of self-assigned religious affiliation, 6,649 identified as Christian, 3,711 as 'no religion', and 318 as Muslim.

Measures

Religious attitude was assessed by the Astley-Francis Scale of Attitude toward Theistic Faith (Astley, Francis, & Robbins, 2012). This scale comprises the following seven items: 'I find it hard to believe in God'; 'Prayer helps me a lot'; 'I think going to a place of worship is a waste of my time'; 'I know that God is very close to me'; 'God helps me to lead a better life'; 'I know that God helps me'; and 'God means a lot to me'. Responses to each item were recorded on a five-point scale: disagree strongly (1), disagree (2), not certain (3), agree (4), and agree strongly (5). Negative items were reverse coded to compute the attitude scale score.

Sex and age were recorded as dichotomous variables: male (1) and female (2); year nine (1) and year ten (2).

Religious affiliation was recorded by a checklist of world faiths and Christian denominations in response to the question, 'What is your religion?' For the current analysis all the Christian categories were collapsed into a single group.

Religious attendance was assessed by the question, 'Apart from special occasions (like weddings) how often do you attend a religious worship service (e.g. at a church, mosque or synagogue)'. Responses were recorded on a seven-point scale: never (1), sometimes (2), at least once a year (3), at least six times a year (4), at least once a month (5), nearly every week (6), and several times a week (7).

Personal prayer was assessed by the question, 'How often do you pray in your home or by yourself?' Responses were recorded on a five-point scale: never (1), occasionally (2), and at least once a month (3), at least once a week (4), and nearly every day (5).

Scripture reading was assessed by the question, ‘How often do you read holy scripture (e.g. The Bible, Qur’an, Torah)?’ Responses were recorded on a five-point scale: never (1), occasionally (2), at least once a month (3), at least once a week (4), and nearly every day (5).

Results

The internal consistency reliability of the Astley-Francis Scale of Attitude toward Theistic Faith was tested by two statistical strategies, principal component analysis and Cronbach’s alpha coefficient (Cronbach, 1951). These routines were conducted among three groups of 6,649 Christians, 3,711 religious unaffiliated, and 318 Muslims. The data are presented in table 1, where the alpha coefficients range between .92 and .88, and the proportions of variance accounted for by the principal component range between 62.2% and 69.2%. These statistics support the homogeneity, unidimensionality, and internal consistency reliability of the instrument among all three groups.

- insert table 1 about here -

Table 1 also presents the mean scale scores and standard deviations recorded by the three groups. These data reflect two interesting comparisons among the groups. The mean scale scores identify the least positive attitude among the religiously unaffiliated and the most positive attitude among the Muslims, with the Christians occupying a middle position. The standard deviations identify greater variability among the Christians than among either the religiously unaffiliated or the Muslims. This is consistent with the view that the religiously unaffiliated tend to be consistently less positive toward religion and that the Muslims tend to be consistently more positive toward religion, while those who self-identify as Christian include a wider range of young people, including those very engaged with religion and those quite disengaged from religion.

- insert table 2 about here -

Table 2 takes a closer look at the way in which the seven individual items of the Astley-Francis Scale of Attitude toward Theistic Faith function within the scale among the three groups considered separately. This was tested by calculation of the correlations between each individual item and the sum of the other six items. These data draw attention to a somewhat lower correlation recorded by the negatively phrased items among the religiously unaffiliated.

- insert table 3 about here -

Table 3 explores the construct validity of the Astley-Francis Scale of Attitude toward Theistic Faith by exploring the correlations between attitude scores and three measures of religious behaviour, namely frequency of reading scripture, frequency of personal prayer, and frequency of worship attendance among the three groups considered separately. While measures of religious affect and religious practice access conceptually distinct aspects of religion, theory suggests that these aspects are correlated (Francis, 2009). These data indicate significant positive correlations between attitudinal scores and all three measures of religious behaviour among all three groups. The strongest correlations are among the Christians which is consistent with the greater variance in attitude scores among this group.

Conclusion

This study drew on data available from the Young People's Attitude to Religious Diversity Project (see Francis, Croft, Pyke, & Robbins, 2012) in order to examine the internal consistency reliability and construct validity of the Astley-Francis Scale of Attitude toward Theistic Faith as proposed by Astley, Francis, and Robbins (2012), replicating the analyses reported by Francis, Brockett, and Village (2013). In the earlier study, Francis, Brockett, and Village (2013) had drawn on data provided by 4,353 students between the ages of 11 and 16 years attending school in three areas of northern England: Blackburn, Kirklees, and York. Specifically they reported separate analyses conducted among 1,367 students who reported

‘no religion’, 1,984 students who reported ‘Christian’, and 817 students who reported ‘Muslim’. From a database of 10,678 students from schools in England, Northern Ireland, Scotland, Wales, and London, the present study reported separate analyses conducted among 3,711 students who reported ‘no religion’, 6,649 students who reported ‘Christian’, and 318 students who reported ‘Muslim’.

Taken together these two studies found good indices of internal consistency reliability and construct validity for the Astley-Francis Scale of Attitude toward Theistic Faith reported among Christian students, Muslim students, and religiously unaffiliated students. The fact that the Astley-Francis Scale of Attitude toward Theistic Faith behaves with good levels of internal consistency reliability and construct validity among these three samples of different religious affiliations (no religion, Christian, and Muslim) commends this instrument for use in multifaith contexts in which it would be less appropriate to employ the Francis Scale of Attitude toward Christianity (Francis, Lewis, Philipchalk, Brown, & Lester, 1995) or the Sahin-Francis Scale of Attitude toward Islam (Sahin & Francis, 2002).

Since both studies on which this conclusion is based were conducted among students in the UK, future research would be advised to replicate the work within other contexts.

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Table 1

Scale properties among religiously unaffiliated, Christian, and Muslim young people

Group	N	alpha	factor %	Mean	SD
No religion	3711	.88	62.2	14.3	5.7
Christian	6649	.92	69.2	22.9	7.0
Muslim	318	.91	64.6	29.3	5.9

Table 2

Item rest of scale correlations among religiously unaffiliated, Christian, and Muslim young people

	no religion	Muslim	Christian
I find it hard to believe in God*	.40	.54	.56
Prayer helps me a lot	.66	.67	.74
I think going to a place of worship is a waste of my time*	.34	.59	.54
I know that God is very close to me	.80	.72	.85
God helps me to lead a better life	.81	.81	.87
I know that God helps me	.82	.85	.88
God means a lot to me	.81	.83	.87

Note: * these items are reverse coded

Table 3

Scale score correlations with sex, age, and religious practice among religiously unaffiliated, Christian, and Muslim youth

group	sex	age	scripture	prayer	worship
No religion	.10***	-.06***	.19***	.33***	.15***
Christian	.06***	-.03**	.49***	.62***	.48***
Muslim	.01	-.04	.43***	.41***	.28***

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