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Introducing the Modified Paranormal Belief Scale: distinguishing between classic paranormal beliefs, religious paranormal beliefs and conventional religiosity among undergraduates in Northern Ireland and Wales

Abstract

Previous empirical studies concerned with the association between paranormal beliefs and conventional religiosity have produced conflicting evidence. Drawing on Rice's (2003) distinction between classic paranormal beliefs and religious paranormal beliefs, the present study proposed a modified form of the Tobacyk Revised Paranormal Belief Scale to produce separate scores for these two forms of paranormal belief, styled 'religious paranormal beliefs' and 'classic paranormal beliefs'. Data provided by a sample of 143 undergraduate students in Northern Ireland and Wales, who completed the Francis Scale of Attitude toward Christianity alongside the Tobacyk Revised Paranormal Belief Scale, demonstrated that conventional religiosity is positively correlated with religious paranormal beliefs, but independent of classic paranormal beliefs. These findings provide a clear framework within which previous conflicting evidence can be interpreted. It is recommended that future research should distinguish clearly between these two forms of paranormal beliefs and that the Tobacyk Revised Paranormal Beliefs Scale should be routinely modified to detach the four religious paranormal belief items from the total scale score.

Introducing the Modified Paranormal Belief Scale: distinguishing between classic paranormal beliefs, religious paranormal beliefs and conventional religiosity among undergraduates in Northern Ireland and Wales

Introduction

Ambiguity remains as to the conceptual and empirical relationship between conventional religiosity and those alternative beliefs defined as ‘paranormal’. From certain psychological perspectives, it could be argued that paranormal beliefs are continuous with conventional religiosity, since both sets of beliefs seem to be concerned with spiritual beings inhabiting an invisible world (Beit-Hallahmi & Argyle, 1997, p.6), or with transcendent notions like heaven and hell, angels and demons (Goode, 2000, pp.165-170). From certain theological perspectives, it could be argued that paranormal beliefs are discontinuous with conventional religiosity, since conventional religious teachings often seem to proscribe adherents from embracing many of the specific beliefs included within the wider paranormal worldview, like communication with the spirits of the dead or divination of future events (Boyd, 1996).

Empirical data on the subject has failed to establish a consistent coherent understanding of what form the relationship between these two variables may take. Findings fall into three main groups. First, a growing group of studies provides some support for the psychological perspective by demonstrating a positive association between conventional religiosity and paranormal beliefs. For example, Thalbourne and Hensley (2001) found a positive correlation between an unidentified standard religiosity scale and the Icelandic Sheep-Goat Scale ($r = .30, p < .005$) among 72 university students in the United States of America. Francis, Williams and Robbins

(2006) found a small but statistically significant correlation ($r = .17, p < .01$) between the Francis Scale of Attitude toward Christianity (Francis, Lewis, Philipchalk, Lester & Brown, 1995) and a six-item index of paranormal belief (concerned with ghosts, horoscopes, fate, divination, and spiritual mediumship) after controlling for sex differences among 279 13- to 16-year-olds in Wales. Francis, Williams and Robbins (in press) found a positive partial correlation, after controlling for sex differences, ($r = .20, p < .001$) between scores recorded on the Francis Scale of Attitude toward Christianity (Francis, Lewis, Philipchalk, Brown & Lester, 1995) and a five-item index of paranormal belief (concerned with contacting the spirits of the dead, ghosts, fate, horoscopes, and tarot cards) among a sample of 2,950 13- to 15-year-olds in England and Wales.

Second, support for the theological perspective is provided by Duncan, Donnelly and Nicholson (1992) who found a negative relationship between self-assessed importance of religion and items concerned with the devil, astrology, extra-sensory perception and reincarnation (developed from items presented by Gallup & Newport, 1991) among 267 university students in the United States of America. Rice (2003) found negative correlations between items concerned with religious paranormal beliefs (concerning heaven and hell, the devil, and the efficacy of prayer) and items concerned with classic paranormal beliefs (as measured by extra-sensory perception, ghosts, psychic healing and reincarnation) among 1,200 adults from the southern states of America who responded to the 1998 Southern Focus Poll. For example, extra-sensory perception was negatively correlated with belief in heaven and hell ($r = -.11, p < .05$) and belief in the devil ($r = -.08, p < .05$), while belief in the efficacy of prayer was negatively correlated with belief in extraterrestrials ($r = -.09, p < .05$).

Third, a number of studies support neither the psychological perspective nor the theological perspective, since they failed to find any consistent relationship between conventional religiosity and paranormal beliefs. For example, Ellis (1988) found few significant correlations between items concerned with superstitious belief (concerned with horoscopes and an outside force controlling a person) and items concerned with religious belief (concerned with a supreme being, guardian angels, and personal immortality) among 355 undergraduate students in the United States of America. For example, no correlation was found between belief in a supreme being and horoscopes guiding life ($r = -.13$, *ns* for males, and $r = -.06$, *ns* for females), while belief that prayer can influence the world was positively correlated with belief in an outside force controlling a person ($r = .18$, $p < .05$ for males, and $r = .24$, $p < .001$ for females). Thalbourne and O'Brien (1999) found non-significant correlations between scores on the Australian Sheep-Goat Scale (Thalbourne & Delin, 1993) and the Haraldsson Religiosity Scale (Haraldsson, 1981) and the Wilson-Patterson Religion-Puritanism Scale (Wilson, 1975) among a sample of 127 members of the general public in the Adelaide metropolitan area of Australia. Krull and McKibben (2006) found a non-significant correlation between scores recorded on a battery of items concerned with religious beliefs (for example, God, heaven, hell, angels and the devil) and a battery of items concerned with paranormal beliefs (for example, astrology, crystals, ghosts, extra-sensory perception, and UFOs) ($r = .10$, *ns*) among a sample of 92 psychology students. Francis and Williams (in press) found a non-significant correlation ($r = .06$, *ns*) between scores recorded on the Short-form Francis Scale of Attitude toward Christianity (Francis, Lewis, Philipchalk, Lester & Brown, 1995) and the Williams-Francis Paranormal Belief Scale (concerned with contacting the spirits of the dead,

ghosts, horoscopes, fortune tellers, psychic powers, magic, and black magic) among a sample of 659 14- to 16-year-old secondary school pupils in England.

One of the major difficulties in synthesising the findings from research concerning the relationship between paranormal beliefs and conventional religiosity has been the differing ways in which these constructs have been conceptualised and operationalised. Rice (2003) calls for greater clarity regarding what is meant by paranormal beliefs by drawing attention to two ways in which the use of the term 'paranormal' may cause confusion in earlier studies. The first usage refers to those beliefs that are discontinuous from conventional religious teachings and could be termed 'classic paranormal beliefs' (for example, *déjà vu*, extra-sensory perception, extraterrestrials, and psychic healing). The second usage refers to those paranormal beliefs that are continuous with conventional religious beliefs and could be termed 'religious paranormal beliefs' (for example, belief in the devil, angels, heaven, hell, and life after death). Rice's distinction between classic paranormal beliefs and religious paranormal beliefs is reflected in the subscale structure of the well-established Tobacyk Revised Paranormal Belief Scale (Tobacyk, 1988), where the subscales are identified as: traditional religious beliefs, psi, witchcraft, superstition, spiritualism, extraordinary life forms and precognition. Rice's distinction, however, calls into question the wisdom of including the traditional religious beliefs subscale within Tobacyk's revised instrument when attempting to capture a relatively pure measure of paranormal belief alongside other operationalisations of traditional or conventional religiosity.

This paper builds on Rice's (2003) suggestion by employing a well-known measure of conventional religiosity, as operationalised by the Francis Scale of Attitude toward Christianity (Francis & Stubbs, 1987), alongside the Tobacyk Revised Paranormal Belief Scale (Tobacyk, 1988). Analyses will be conducted to examine the relationships between conventional religiosity and 1) the Tobacyk Revised Paranormal Belief Scale, 2) a modified form of the Tobacyk instrument omitting the traditional religiosity subscale, 3) the traditional religiosity subscale.

METHOD

Sample

Psychology and theology first-year undergraduate students attending specific classes in two universities (one in Northern Ireland and one in Wales) were invited to complete, during normal class activities, a questionnaire concerned with conventional religiosity and paranormal beliefs. Participation was voluntary, participants were assured of anonymity and confidentiality, and all attending students accepted the invitation. The respondents comprised 44 males and 95 females. In line with the expected profile of undergraduate students, 55% were aged 19 or under, 40% were aged 20- to 29-years and the remaining 5% were aged 30 years or over. In response to the question 'What is your religious affiliation?' 78% identified as being Christian, 2% identified as belonging to another world faith, and 19% stated that they had no religious affiliation. Of those who identified as being Christian, 44% stated that they belonged to the Anglican Church, 42% to the Roman Catholic Church, and the remaining 14% to other Christian denominations. In relation to personal prayer, 12% never prayed, 31% prayed occasionally, 2% on a monthly basis, 24% on a weekly basis and 31% on a daily basis.

Measures

Paranormal belief was assessed by the Tobacyk Revised Paranormal Belief Scale (Tobacyk, 1988), a 26-item Likert-type instrument designed to measure seven components of paranormal belief, defined as: traditional religious beliefs, psi, witchcraft, superstition, spiritualism, extraordinary life forms, and precognition. Each item was assessed on a five-point scale: agree strongly, agree, not certain, disagree, and disagree strongly. Higher scores in this scale indicate a more accepting view of paranormal phenomena. Previous research has displayed satisfactory levels of reliability (Dag, 1999; Lindeman & Aarnio, 2007).

Conventional religiosity was assessed by the Francis Scale of Attitude toward Christianity (Francis & Stubbs, 1987). This is a 24-item Likert-type instrument concerned with affective responses to God, Jesus, the bible, prayer and the church. Each item was rated on a five-point scale: 'agree strongly', 'agree', 'not certain', 'disagree', and 'disagree strongly'. Higher scores indicate a more positive attitude toward Christianity. Previous research has displayed satisfactory levels of reliability (Francis & Orchard, 1999; Lewis & Maltby, 2000).

Frequency of personal prayer was assessed on a five-point scale: never, occasionally, monthly, weekly, and daily.

RESULTS AND DISCUSSION

Table one and table two present the item-rest-of-test correlations, percentage endorsement and alpha coefficients for the Francis Scale of Attitude toward

Christianity, and for the Tobacyk Revised Paranormal Belief Scale, the proposed Modified Paranormal Belief Scale, and the Traditional Religious Beliefs subscale.

- insert table one and two about here -

These data demonstrate that satisfactory alpha coefficients (Kline, 1993) were achieved by the Francis Scale of Attitude toward Christianity (0.96), the Tobacyk Revised Paranormal Belief Scale (0.84), the Modified Paranormal Belief Scale (0.84), and the Traditional Religious Belief subscale (0.83). Further, table two also presents the alpha coefficients for the other six subscales of the Tobacyk Revised Paranormal Belief Scale. Of these, five subscales exceed the criteria suggested by De Vellis (1991) of 0.65: traditional religious beliefs (0.83), psi (0.73), witchcraft (0.72), superstition (0.67), spiritualism (0.72), and precognition (0.66), the exception being the extraordinary life forms subscale (0.49).

In terms of the percentage endorsement of items, that is the sum of the agree and agree strongly responses, the data indicate a generally positive attitude toward Christianity. For example, 71% of the students believed that Jesus still helps people, and 70% said that the idea of God means much to them. By way of contrast, the proportions fell to 22% who thought going to church is a waste of time, and to 27% who deemed the bible to be out of date.

In relation to classic paranormal beliefs, the data indicate a wide array of opinions across different issues. While 48% believed that witches do exist, the proportion dropped to 27% who believed that reincarnation does occur. While only 4% believed that black cats bring bad luck, 14% believed that breaking a mirror can bestow

misfortune. While only 9% believed that a person's horoscope can accurately predict the future, 38% believed that psychics can accurately predict the future.

In order to respond to Rice's (2003) challenge to test for the differences between religious paranormal beliefs and classic paranormal beliefs, the conventional religiosity beliefs subscale and the remaining paranormal beliefs subscales of the Revised Paranormal Belief Scale were separated to provide a clearer understanding of the relationship between classic paranormal beliefs, and religious paranormal beliefs.

- insert table three about here -

Table three presents the partial correlations for the full Tobacyk Revised Paranormal Belief Scale (RBPS), the Modified Paranormal Belief Scale (MBPS), the Traditional Religious Belief subscale, the Francis Scale of Attitude toward Christianity, and frequency of personal prayer, after controlling for sex differences which may account for some of the relationship between religious and paranormal beliefs (Francis & Williams, 2007). These data demonstrate that frequency of personal prayer was highly correlated with both the scale of attitude toward Christianity ($r = .79, p < .001$) and the traditional religious belief subscale ($r = .62, p < .001$). Further, both the scale of attitude toward Christianity and the traditional religious belief subscale were highly correlated ($r = .78, p < .001$), indicating that there is a significant relationship between conventional religiosity and religious paranormal beliefs. In terms of the relationship between classic paranormal beliefs and conventional religiosity, no significant correlations were found between the Modified Paranormal Belief Scale and either the Francis Scale of Attitude toward Christianity ($r = -.02, ns$) or the frequency of

personal prayer ($r = .03$, *ns*). Moreover, the inclusion of the four items from the traditional religious beliefs subscale within the Revised Tobacyk Paranormal Belief Scale do not enhance the internal consistency reliability of the instrument and may detract from the conceptual clarity of the construct being measured.

CONCLUSION

This study set out to examine the relationship between conventional religiosity and paranormal belief against the background of a field of research that has failed to demonstrate a consistent pattern of relationships between these two variables. On the one hand, one body of literature has failed to establish any relationship between paranormal beliefs and conventional religious beliefs. On the other hand, another body of literature has established small correlations between the two variables in both positive and negative directions. This study has been further nuanced by the work of Rice (2003) who has distinguished between religious paranormal beliefs that may be continuous with conventional religiosity and classic paranormal beliefs that may be discontinuous with conventional religiosity.

Employing the Tobacyk Revised Paranormal Belief Scale alongside the well-established Francis Scale of Attitude toward Christianity (as a measure of conventional religiosity), the data has demonstrated that one of the subscales of the Tobacyk measure functions in relation to conventional religiosity in a manner quite different from the other six subscales. In light of these findings, it is recommended that future research concerning paranormal beliefs should distinguish clearly between the two forms of paranormal belief identified by Rice (2003) and styled classic paranormal beliefs and religious paranormal beliefs. Moreover, as a consequence of

this differentiation, a Modified Paranormal Belief Scale is proposed which modifies the scoring procedure of the Tobacyk Paranormal Belief Scale in order to dissociate the four traditional religious belief items from the total scale score.

Recognising the limitations with the present study, further research is now needed to test the relationships between conventional religiosity, religious paranormal beliefs and classic paranormal beliefs among larger more representative samples of the general population, rather than among convenience samples of university students.

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Table One Scale properties and percentage endorsement for the Francis Scale of Attitude toward Christianity

	<i>r</i>	%
I find it boring to listen to the bible*	.42	25
I know that Jesus helps me	.84	57
Saying my prayers helps me a lot	.79	59
The church is very important to me	.70	43
I think going to church is a waste of time*	.54	22
I want to love Jesus	.72	68
I think church services are boring*	.26	38
I think people who pray are stupid*	.42	7
God helps me to lead a better life	.78	53
I like to learn about God very much	.67	58
God means a lot to me	.81	66
I believe that God helps people	.65	75
Prayer helps me a lot	.82	56
I know that Jesus is very close to me	.77	51
I think praying is a good thing	.61	70
I think the bible is out of date*	.56	27
I believe that God listens to prayers	.75	59
Jesus doesn't mean anything to me*	.73	23
God is very real to me	.82	60
I think saying prayers does no good*	.55	11
The idea of God means much to me	.81	70
I believe the Jesus still helps people	.68	71
I know that God helps me	.83	58
I find it hard to believe in God*	.70	27
<i>Alpha</i>	.96	

Note * These items were reverse coded to compute the item-rest-of-test correlations

Table Two Scale properties and percentage endorsement for the Tobacyk Revised Paranormal Belief Scale

	RBPS <i>r</i>	MPBS <i>r</i>	Subscale <i>r</i>	%
Traditional Religious Beliefs				
The soul continues to exist though the body may die	.42		.56	80
The is a devil	.32		.65	60
I believe in God	.25		.69	76
There is a heaven and a hell	.24		.75	66
<i>Subscale alpha</i>			.83	
Psi				
Some individuals are able to levitate (lift) objects through mental forces	.53	.57	.66	32
Psychokinesis does exist	.52	.55	.67	35
A person's thoughts can influence the movement of a physical object	.50	.52	.55	24
Mind reading is not possible*	.26	.28	.25	29
<i>Subscale alpha</i>			.73	
Witchcraft				
Black magic really exists	.37	.38	.41	42
Witches do exist	.30	.28	.61	48
Through the use of formulas and incantations, it is possible to cast spells on persons	.47	.49	.47	16
There are actual cases of witchcraft	.43	.41	.56	50
<i>Subscale alpha</i>			.72	
Superstition				
Black cats can bring bad luck	.15	.14	.45	3
If you break a mirror you will have bad luck	.32	.32	.63	14
The number "13" is unlucky	.22	.19	.42	9
<i>Subscale alpha</i>			.67	
Spiritualism				
Your mind and soul can leave your body and travel	.52	.53	.59	33
During altered states the spirit can leave the body	.51	.54	.58	24
Reincarnation does occur	.36	.41	.40	27
It is possible to communicate with the dead	.52	.51	.47	29
<i>Subscale alpha</i>			.72	
Extraordinary life forms				
The abominable snowman of Tibet exists	.30	.31	.46	12
The Loch Ness monster of Scotland exists	.30	.26	.33	14
There is life on other planets	.08	.13	.17	44
<i>Subscale alpha</i>			.49	
Precognition				
Astrology is a way to accurately predict the future	.40	.43	.43	16
The horoscope accurately tells a person's future	.31	.34	.35	9
Some psychics can accurately predict the future	.51	.55	.58	38
Some people have an unexplained ability to predict the future	.42	.41	.42	51
<i>Subscale alpha</i>			.66	
<i>Total scale alpha</i>	.84	.84		

Note **RPBS = Revised Paranormal Belief Scale**
MPBS = Modified Paranormal Belief Scale

Table Three Partial correlations controlling for sex differences

	FSAC	MPBS	RPBS	RelPB
Prayer	.791***	.029	.180	.622***
RelPB	.779***	.262	.502***	
RPBS	.189	.956***		
MPBS	-.016			

Note FSAC = Francis Scale of Attitude toward Christianity
 RPBS = Revised Paranormal Belief Scale
 MPBS = Modified Paranormal Belief Scale
 RelPB = Religious Paranormal Belief sub-scale