

# THE DEVELOPMENT AND ASSESSMENT OF A NEW QUESTIONNAIRE TO ASSESS BELIEFS IN LIFE AFTER DEATH

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## ABSTRACT

Belief in life after death forms a key aspect of all major established religions, and even in individuals not overtly religious. These beliefs significantly influence their experiences and behaviours. Previous research has assessed afterlife beliefs in wider theoretical and empirical contexts including generic paranormal belief, religious beliefs, or belief in an afterlife as a coping mechanism against death anxiety. There are currently few measures directly examining individual differences in life after death beliefs. We designed the Survival Beliefs Questionnaire (SBQ) and assessed its psychometric properties in 297 adults. To assess its validity we also asked them to complete standard measures of paranormal and religious beliefs. The psychometric properties of our questionnaire were found to be excellent. There were significant positive correlations for scores on the SBQ with paranormal belief and religiosity, thus confirming its validity. In addition, the data revealed sex differences as females scored significantly higher than males on all three measures. A series of regressions (controlling for sex) were then conducted, initially with paranormal and religious questionnaires total scores, and then with their individual subscales. Total scores on both paranormal, and religious questionnaires made significant contributions to SBQ total score. When assessing the contribution of the subscales of the paranormal and religious scales, only the paranormal subscale of spiritualism made a significant contribution to SBQ scores. In sum, we have created a novel questionnaire to explore individual differences in life after death beliefs which can be used in future studies to assess socio-psychological characteristics and resulting behaviours associated with such beliefs.

## INTRODUCTION

Belief in an afterlife is a key component of all the world's major religions (Shushan, 2009), and while prevailing scientific views on the possibility that some discarnate aspect of the personality survives physical death are conflicting (Kelly, Crabtree, & Marshall, 2015; Martin & Augustine, 2015), the extent of belief in an afterlife has changed little in recent decades (e.g. Haraldsson, 2006; Harley & Firebaugh, 1993; Sjödin, 2002). Indeed, one study of over 2000 UK adults found that 49% believed in an afterlife, with more of the participants believing in an afterlife than in a God (Sullivan, Voas, & Brown, 2012). Similarly, a poll collating views across 23 countries found that 51% of all participants believed in an afterlife (Rey, 2011). Typically, afterlife beliefs have been examined in the wider context of religious or spiritual beliefs, paranormal beliefs, or individual differences relating to sex, nationality and personality traits (Lindeman & Aarnio, 2006; Thalbourne, 1995, 1996; Tobacyk & Milford, 1983).

Belief in the afterlife can influence important life decisions, such as the number of individuals who decide to organise their lives in greater compatibility with their spirituality following a near-death experience (Fontana, 2009), and the determination to live life to its fullest as a result (see Kellehear, 1996). Belief in an afterlife can be related to differences in thinking styles, such as the relationship between high levels of intuitive

thinking and magico-religious beliefs including belief in spiritualism (Lindeman & Aarnio, 2006). Afterlife beliefs are considered for their functionality in dealing with stressful life events, with previous literature exploring afterlife beliefs as a means for attenuating fear of death (Cooper, 2011; Falkenhain & Handal, 2003; Hui & Coleman, 2012; Osarchuk & Tatz, 1973). Benore and Park (2004) considered belief in the afterlife beyond the parameters of religion, as part of an individual's 'global' sense of self, and as helpful in dealing with bereavement (also see, Cooper, 2017; Cooper, Roe & Mitchell, 2015). Research conducted by Thalbourne (1996) on 85 Australian undergraduates assessed a range of after-life beliefs, including adherence to dualistic philosophy, death anxiety, desire for an afterlife, and *types* of afterlife. Interestingly the most important variable regarding life after death belief amongst this sample was, simply, that there was a 'liking' for there to be an afterlife.

It is therefore surprising that investigations into life after death beliefs have been hampered by the lack of unifying theoretical frameworks within the psychological literature. Beliefs in an afterlife often lack explanation (Burriss & Bailey, 2009; Flannelly, Koenig, Ellison, Galek & Krause, 2006), and there is a lack of empirical research regarding the differences in afterlife beliefs from religious, spiritual, or secular viewpoints (Ai et al., 2014). There remains little consensus reached as to a set of *definitions* of life after death beliefs for purposes of psychological measurement where, in many cases, belief in an afterlife is measured by one single item, or where the concept of 'afterlife' is often seen as unidimensional or implicit (Burriss & Bailey, 2009). Differences in the application of terms for afterlife phenomena, including 'spirits' 'heaven' and 'eternal,' also present difficulties when conceptualising what beliefs are being examined (Fontana, 2009), with belief in an afterlife often not detached from associated religious or spiritual beliefs, and with different and even conflicting interpretations of similar concepts made between different age groups or as a result of cross-cultural differences (French & Stone, 2014). There is some literature referring to the beliefs that individuals hold about the *types* of afterlife, including concepts of disembodied spirit, bodily resurrection (e.g. Bering, 2002; Burriss & Bailey, 2009), and beliefs in reincarnation from a range of both religious (e.g. Hui & Coleman, 2012) and wider religious and spiritual perspectives (e.g. Burriss & Bailey, 2009; Haraldsson, 2006; King et al., 2006). Lifton and Olson (1975) even discuss forms of survival beliefs not associated with conscious survival of death, such as, for example, biological survival through our offspring and creative survival (our writing, creations and achievements). Nonetheless a set of phenomena associated with life after death within popular Western culture, such as ghosts and the potential for mediums to communicate with the deceased, continue to be the source of fascination for a substantial proportion of both the UK and American public (French & Stone, 2014). Despite such phenomena being the focal content for countless television programmes, films and online content, empirical measurement of such afterlife beliefs remains surprisingly limited.

Life after death beliefs have been mainly considered within either paranormal *or* religious contexts: arguably because both paranormal phenomena and religion have the ability to explore potential hidden realities beyond everyday circumstances (Guthrie,

1996) and beyond current principles of science (Swami, Pietschnig, Stieger & Voracek, 2011). Previous studies have considered afterlife beliefs as part of a wider set of paranormal beliefs (beliefs which defy current scientific understanding). For example, Rice (2003) revealed that belief in life after death was significantly positively correlated with belief in heaven, the Devil, power of prayer, extrasensory perception (ESP), extraordinary life forms, ghosts, healing, reincarnation and déjà vu. While correlation does not of course indicate causality, the evidence suggests that life after death, and paranormal beliefs are strongly positively associated. Indeed, a further study examining the relationship between belief in extra-terrestrial life forms and paranormal beliefs conducted by Swami, et al., (2011) found significant positive correlations for life after death beliefs with beliefs in alien visitation and cover ups, superstition, ESP and unusual experiences. Subsequent multiple regression analyses then found that belief in an afterlife was the second strongest predictor of belief in alien visitation and cover up.

However, current empirical evidence of measuring life after death beliefs in paranormal contexts is complicated by discourse as to what constitutes 'paranormal' phenomena and what does not (Irwin, 1993, 2009; Thalbourne, 1989). Irwin and Watt (2007) refer to three parapsychological domains: ESP, Psychokinesis (PK) and the 'survival hypothesis'. However, anomalistic psychological perspectives often take a wider view of paranormal as phenomena which, at first glance, may represent an event that cannot be explained by current scientific knowledge, which can also include UFOs, crop circles and extraordinary life forms such as Loch Ness Monster and Bigfoot (French & Stone, 2014). Lindeman and Aarnio (2006) refer to paranormal beliefs as ostensibly an incorporation of magical (the belief that one's own thoughts or desires can influence the external world) and superstitious beliefs (any beliefs or practices regarded as irrational or supernatural if arising from a misunderstanding of causality or science). There is debate as to whether or not superstition actually indicates magical thinking as opposed to paranormal belief (Zusne & Jones, 2014), with considerable discourse as to the origins and functions of superstitious thinking (e.g. Wiseman & Watt, 2004).

Measurement of life after death belief is further complicated when considering religiosity, primarily as there is also little consensus as to what defines religion, with a range of cognitive and intellectual explanations for its origins and purpose (Boyer & Walker, 2000; Guthrie, 1996). Religious belief is also interpreted within differing cultural contexts (Bering, 2002). It is suggested that there are also differences between theology and 'everyday religion' in terms of religions' influences on decisions and behaviour (Barrett & Keil, 1996). Previous empirical evidence has been heavily biased towards utilising methodologies focusing on church attendance and self-reported religious affiliation (Flannelly, et al., 2006; Klenow & Bolin, 1990) which are arguably crude measures of religious belief and provide little information about strength of belief or the levels of social support provided (Flannelly, Ellison, & Stroock, 2004). Methodologies used to measure spirituality are inconsistent (Flannelly, et al., 2006; Koenig, 2009), yet empirical evidence suggests significant relationships between spirituality and beliefs in an afterlife (King et al., 2006).

Measurements utilised to assess afterlife beliefs in psychological literature have included scales that have considered the afterlife more broadly within paranormal beliefs, such as the 'Revised Paranormal Belief Scale' (Tobacyk, 2004) and the 'Australian Sheep-Goat Scale' (Thalbourne, 1995) which both contain life after death belief items as subscales. The 'Religious Attitudes and Practices Inventory' (D'Onofrio et al., 1999) and the 'Values and Beliefs Scale' (King et al., 2006) both consider life after death in the wider context of spirituality. Although life after death beliefs are included in these measures, these items form only one small component of these questionnaires, presenting challenges in terms of generating focused data beyond a limited number of items. Further, life after death belief scales typically examine what participants believe happens after death (Burriss & Bailey, 2009). The 'Belief in Afterlife Scale' (Osarchuk & Tatz, 1973) has been widely used in previous literature (e.g. Bering, 2002; Cooper, 2011, 2017) and it does focus on life after death specifically. This scale explores afterlife beliefs in the context of survival of some form of consciousness, but it could be argued that many of the items present a generalised view of an afterlife from both a theoretical and empirical perspective, as none of the items appear to explore *forms* the afterlife may take beyond an implicit notion of post-mortem survival. The 'Connection of Soul Scale' (Ai et al., 2014) contains 3 sub-scales (secular view, god-centred view and cosmic spiritual view) for purposes of measuring afterlife perspectives across a range of world views. However, it could be suggested that demarcations of spiritual vs god-centred items in this scale could still be widely debated, in that individuals may vary greatly in terms of their interpretation of faith, and what individuals consider as differences between what constitutes a god or external being and what constitutes a unifying cosmic force (Ai et al., 2014).

The aim of this study was thus to overcome the limitations of measurements specifically targeting life after death beliefs independently of other religious and paranormal beliefs. For this purpose, we devised the Survival Beliefs Questionnaire (SBQ); an 18-item scale measuring an individual's afterlife beliefs derived from popular notions relating to life after death including, belief in ghosts, reincarnation, and the potential for the dead to contact the living. The purpose of this study was to assess the possible relationships of life after death beliefs with other supposedly related beliefs (paranormal and religious beliefs). We do not set out to address all of the aforementioned issues, but instead attempt to focus on one specific issue – to provide a more nuanced measure of the paranormal elements of life after death beliefs. We predicted that SBQ scores would be positively correlated with scores on standard assessments of paranormal and religious beliefs, but such differences might be influenced by the sex of the participant, as previous research has reported sex differences in religiosity and paranormal beliefs (e.g. Aarnio & Lindeman, 2005; Höllinger & Smith, 2002). We also sought to discover whether or not paranormal belief, religious belief, or sex were able to predict scores on the SBQ (using hierarchical linear regression).

## METHOD

### *Participants*

Adult participants were recruited via social media posts and emails and directed to a link to the survey on the online survey Qualtrics ([www.qualtrics.com](http://www.qualtrics.com)). A total of 403 participants took part. Out of this sample, one person did not record their sex and so their data was dropped from the analysis. An additional 105 participants only provided partial information in relation to the questionnaires, perhaps completing one or two but then omitting the rest, these individuals were dropped from the data analysis with 297 complete data sets thus being received. The final sample thus comprised 297 complete data sets (81 males and 216 females). Due to an error in data collection the ages were not recorded, but all participants specified that they were over 18 years old before taking part. Participants self-selected nationality with 207 (69.5%) stating that they were British, 34 (11.4%) stating that they were North American (USA and Canada), 28 (9.4%) being Australian, 16 (5.4%) describing themselves as European. The remaining 12 participants were classed as 'rest of the world' or preferred not to state their ethnicity. None received payments for their contribution.

### *Materials*

Participants were asked to complete three questionnaires, the Revised Paranormal Belief Scale (RPBS), the Religious Attitudes and Practices Inventory (RAPI); and the newly-developed Survival Beliefs Questionnaire' (SBQ). The RPBS (Tobacyk, 2004) is a widely used 26-item self-report questionnaire designed to measure belief across a range of paranormal phenomena comprising 7 subscales: Traditional Religious Belief; Psi; Witchcraft; Superstition; Spiritualism; Extraordinary Life Forms and Precognition. All items are rated up to a 7-point scale (1 = *strongly disagree*, 7 = *strongly agree*). Cronbach's  $\alpha$  of each subscale for RPBS for the present study were as follows: Traditional Religious Belief = .82; Psi = .61; Witchcraft = .93; Superstition = .76; Spiritualism = .93; Extraordinary Life Forms = .72 and Precognition = .89.

The RAPI (D'Onofrio et al., 1999) is a 14-item self-report item scale comprising 2 subscales for the purposes of measuring theism (belief in the existence of specific deities or a god) and spirituality (more generic beliefs not directly associated with a god). For this study, the wording of some items was amended to account for potential diverse religious belief that could be held by participants (e.g. item amended from "*My faith in God helps me through the hard times*" to "*My faith in a God helps me through the hard times*"). Cronbach's  $\alpha$  for measure subscales in this study were: Theism = .96; Spirituality = .90.

The final questionnaire comprised our newly-designed SBQ, an 18-item scale (see Appendix 1 for full scale) designed to measure life after death beliefs including ghosts, continuation of the soul after death and the potential for the dead to communicate with the living. In a preliminary study a researcher interviewed 42 undergraduates taking a popular parapsychology option and the students were asked to generate a large list of relevant items. They were provided with existing measures of paranormal, superstitious

and religious beliefs to assist their thought process. They were asked to consider only items which related life after death beliefs and all items were discussed before a final set of questions were selected. Questions which were felt to be unclear, too culturally specific (e.g. relating to belief zombies), or not strictly relevant (e.g. belief in vampires) were discarded. While some statements (questions 14, 15, 17 – see Table 1) may not appear to be directly related to belief in life after death, the students felt that they reflected a strong paranormal influence and indeed for example that ‘guardian angels’ represented the soul of a dear-departed family member or friend, while ‘evil spirits’ could also reflect the continued after-death existence of a malign personality.

In an initial factor analysis 19 items were examined and one was found to have a low factor loading and so was discarded. The 18 items which make up the scale are rated up to a 7-point Likert-type scale (1 = strongly disagree, 7 = strongly agree), with total scores thus ranging from 18-126. One item (16) is reverse-scored – we included this as a ‘veracity check’ assuming that if someone was not taking the questionnaire seriously then this question could alert us to this. The final version of the SBQ was subject to a principal components analysis with varimax rotation. A KMO test (.965) and Bartlett’s test of sphericity ( $X^2_{153} = 6906, p < .001$ ), indicated that test items were appropriate. A screeplot suggested a one-factor solution which we enforced, the factor loadings are presented in table 1. Items revealed a loading range between .70 and .94 with Cronbach’s alpha  $\alpha = .98$ , demonstrating high internal consistency for the SBQ measure, as explained in the table below. Pearson’s Product Moment correlations for all SBQ items were also found to be significant, with high internal reliability for all items.

To assess reliability, we recruited an additional 30 adults (11 males and 19 females) and asked them to take the test twice, separated by approximately 4 weeks. The test-retest displayed significant positive correlations between the first and second attempts ( $r = .93, p < .001$ ) indicating a high level of reliability.

### *Design*

Using a correlational design we assessed paranormal, religious and survival after death beliefs using an online questionnaire survey. As previous research has reported sex differences in religiosity and paranormal beliefs, an initial set of analyses firstly compared male and female scores on all questionnaires. We then conducted partial correlations (controlling for sex where appropriate) to explore possible relationships between scores on the SBQ, Revised Paranormal Belief Scale (RPBS) and Religious Attitudes and Practices Inventory (RAPI). Correlations were then followed with hierarchical regression analyses conducted to establish possible predictor variables of SBQ belief.

*Table 1: SBQ Factor structure and internal consistency of SBQ (N = 297)*

	Factor 1 loading:
(1). I believe in ghosts	.91
(2). I think that my soul will continue to exist after I die	.86
(3). Some people (mediums) can communicate with the dead	.90
(4). When you die your soul can be 'reborn' in another body (reincarnation)	.81
(5). After death there is an afterlife	.85
(6). Ghosts are able to interact with living beings	.94
(7). It is possible to hear the voices of the dead and record them via electronic equipment	.90
(8). It is possible to take photographs of ghosts	.90
(9). Some houses or locations are haunted	.93
(10). It is possible for non-physical entities to interact with the physical world	.88
(11). Poltergeists (noisy, mischievous spirits) exist	.90
(12). Ouija boards can be used to contact the dead	.83
(13). Animals (like cats and dogs) are sensitive to ghosts and spirits	.92
(14). Some people have a guardian angel watching over them	.86
(15). It is possible for evil spirits to take possession over someone's body	.80
(16). I do not believe in life after death*	.71
(17). Demons and evil spirits can be 'called up' and their power harnessed	.70
(18). Some people can sense when a loved one has died	.77
Eigenvalues	13.217
Cronbach's $\alpha$ (18 items)	.98

\*No 16 is reverse scored

### *Procedure*

Following institutional ethical approval participants were invited to take part in the survey by clicking on the Qualtrics link provided via email or social media. On accessing the survey, participants were given full information about the study prior to taking part.

For consent, each participant was required to confirm that they were aged 18 or over, that they gave their consent for their information to be used by the researcher for the purposes of study only, that they understood that they were free to withdraw their information at any time, and that they were free to leave blank any questions that they did not wish to answer. The participant was then asked to confirm their consent by clicking on the 'Agree' button on the screen. Consent was mandatory and participants could not access and complete the survey without consent being recorded. Participants were asked to state their sex and nationality. They were then asked to complete the online survey comprising all 3 measures. Tests were completed in randomised order, with the exception of SBQ, which was always presented first. On completion of the survey, participants were given a study debrief online.

## RESULTS

### *Descriptive statistics.*

The data set has been made available to the Open Psi network. In an initial set of analyses, an independent-samples *t*-test was used to compare mean scores between males and females on each of the questionnaires (total scores and the subcomponents), mean scores and significant differences are presented in table 2.

Table 2 reveals that significant sex difference were found for the SBQ total; RPBS total; religious beliefs; psi; witchcraft; spirituality, and precognition; with females scoring significantly higher in all cases. No significant sex differences were revealed for scores on the RAPI.

### *Correlational and regression analyses.*

As sex differences were found for the SBQ, for RBPS total and 5/7 RPBS subscales, partial correlations (two-tailed) controlling for sex were then conducted to assess possible relationships between SBQ scores and scores on the RPBS and RAPI. The resulting correlations are presented in table 3:

Significant positive correlations were found between SBQ total scores and both RPBS and RAPI total scores, and for each of their respective subscales.

Hierarchical regression analysis was then performed to assess the extent to which participant sex, total scores on the RPBS and RAPI, and their associated subscales, uniquely predicted SBQ total score. In an initial analysis, sex was entered as block 1, and RAPI total scores and RPBS total scores entered together in block 2. Sex (model 1) predicted 1.8% of the variance in SBQ score:  $R^2 = .018$ , ( $F, 1,295$ ) = 5.38,  $p < .05$ , while RAPI and RPBS totals (model 2) predicted 59.9% of the variance in SBQ total:  $R^2 = .617$ , ( $F, 2,293$ ) = 229.3,  $p < .001$ . While sex on its own did make a significant contribution to the regression:  $B = .134$ ,  $t(295) = 2.32$ ,  $p < 0.05$ ; when RAPI and RPBS totals were included, then sex became non-significant.



Table 2. Group statistics with Means and Standard Deviation (SD) and independent samples *t*-test scores for males (*n*=81) and female (*n*=216) participants in all scale totals and subcomponents. RAPI = Religious Attitudes and Practices Inventory; RPBS = Revised Paranormal Belief Scale

	Gender		t
	Male Mean (SD)	Female Mean (SD)	
RAPI			
RAPI theism	20.80 (14.98)	22.56 (15.49)	-0.88
RAPI spirit	19.02 (10.37)	21.31 (10.84)	-1.64
RAPI total	39.83 (24.01)	43.88 (24.80)	-1.26
RPBS			
RPBS religion	11.49 (7.19)	13.57 (7.09)	-2.24*
RPBS psi	13.04 (6.48)	14.94 (6.84)	-2.17*
RPBS witchcraft	11.80 (7.67)	14.24 (8.29)	-2.30*
RPBS superstition	4.32 (2.47)	4.88 (3.38)	-1.55
RPBS spiritualism	12.89 (7.87)	16.01 (8.61)	-2.85*
RPBS belief in extraordinary life forms	10.41 (3.70)	10.15 (4.34)	0.51
RPBS precognition	9.59 (5.97)	13.07 (7.07)	-4.24**
RPBS total	73.54 (33.93)	86.86 (37.33)	-2.80*
SBQ total	63.37 (36.77)	73.95 (34.34)	-2.32*

\**p*<.05 \*\**p* <.0001

Both RAPI and RPBS however made significant contributions to the regression:  $\beta = .155$ ,  $t(293) = 3.43$ ,  $p < 0.01$ ;  $\beta = .680$ ,  $t(293) = 14.87$ ,  $p < 0.001$ ) respectively. Note that the contribution made by RPBS total was rather more than that made by RAPI total.

Table 3. Results for Pearson's partial correlations (two-tailed) controlling for sex on SBQ with all other scales and sub-scales

SBQ	<i>r</i>	<i>p</i>
RAPI		
RAPI Theism	.53	.000**
RAPI spirituality	.54	.000**
RAPI total	.56	.000**
RPBS	.60	.000**
RPBS religion	.67	.000 **
RPBS psi	.66	.000 **
RPBS witchcraft	.18	.002 *
RPBS superstition	.79	.000 **
RPBS spiritualism	.53	.000 **
RPBS extraordinary life forms	.68	.000 **
RPBS precognition	.77	.000 **
RPBS Total	.53	.000**
RAPI	.54	.000**

N = 297, NB: (2-tailed) \* $p < .01$  \*\*  $p < .001$

In a subsequent regression, the same analysis was conducted but here replacing RAPI and RPBS totals with the individual subscales from each questionnaire. As before, sex (model 1) predicted 1.8% of the variance in SBQ score:  $R^2 = .018$ ,  $(F, 1,295) = 5.38$ ,  $p < .05$ , while the RAPI and RPBS subscales together (model 2) predicted 64.6% of the variance in SBQ total:  $R^2 = .664$ ,  $(F, 2,286) = 61.21$ ,  $p < .0001$ . Again, sex on its own did make a significant contribution to the regression:  $\beta = .134$ ,  $t(295) = 2.32$ ,  $p < 0.05$ ; but when RAPI and RPBS subscales totals were included, then sex became non-significant. Interestingly, only the RPBS subscale of Spiritualism made a significant contribution to the regression:  $\beta = .580$ ,  $t(286) = 7.14$ ,  $p < 0.001$ ; with RAPI Theism and RPBS Religiosity approaching significance:  $\beta = .130$ ,  $t(286) = 1.88$ ,  $p = 0.062$ ;  $\beta = .113$ ,  $t(286) = 1.89$ ,  $p = 0.06$  respectively.

## DISCUSSION

The aim of this study was to develop a new questionnaire to assess life after death beliefs (the SBQ), confirm its psychometric properties, and then assess its validity by exploring relationships between scores on the SBQ and standard questionnaires of paranormal belief (the RPBS) and religiosity (the RAPI). It could be argued that the

results of the current study demonstrate that the questionnaire is of high internal reliability and shows good test-retest reliability. As sex differences emerged for scores on the SBQ and the RPBS (females scoring significantly higher than males in each case - as expected: see Thalbourne, 1989) then subsequent correlations were bivariate (controlling for sex) and hierarchical regression analyses with sex as a separate model were conducted. The validity of the SBQ was confirmed as we found positive correlations between scores on the SBQ and RPBS and RAPI totals, and their subscales.

Our findings are thus in accord with previous research showing positive associations between paranormal belief and afterlife beliefs (Rice, 2003; Swami et al., 2011), and religiosity (Flannelly et al., 2006; King et al., 2006; Willard & Norenzayan, 2013). Our scale thus provides a more nuanced understanding of the paranormal aspects of life after death beliefs; though we acknowledge that it does not address the full range of issues associated with this topic. Clear sex differences were also found in some aspects of belief, as women scored significantly higher than men on the SBQ, on total paranormal belief score, and 4/7 (religiosity, witchcraft, spiritualism, precognition) of the subscales that comprise total paranormal belief score. Again, these findings are in accord with the majority of previous research demonstrating that females show stronger paranormal beliefs than males (e.g. Aarnio & Lindeman, 2005; Höllinger & Smith, 2002; Rice, 2003; Thalbourne, 1989; Wiseman & Watt, 2004).

While both RAPI and RPBS subscales were shown to be significant predictors of SBQ total score, RPBS total appeared to make a larger contribution, this was echoed by the finding that only 1 RPBS subscale (Spiritualism) made a significant contribution to the regression analysis. This is perhaps not surprising as the four statements which make up the Spiritualism subscale comprise “*Your mind or soul can leave your body and travel (astral projection)*”; “*During altered states (such as sleep or trances) the spirit can leave the body*”; “*Reincarnation does occur*”; and “*It is possible to communicate with the dead*” which are very similar to items within the SBQ.

It could be argued that the SBQ utilises ostensibly *paranormal* constructs of what constitutes life after death beliefs (French & Stone, 2014; Irwin & Watt, 2007; Irwin, 2009; Thalbourne, 1989; Thalbourne & Delin, 1994) as opposed to belief in afterlife scales that appear to utilise wider theoretical constructs to explore afterlife beliefs, transcending an individual’s paranormal belief, religion or spirituality (Ai, et al., 2014; Osarchuk & Tatz, 1973). On first inspection, it could appear that this may present empirical challenges in utilising SBQ, as it would arguably be accessing an individual’s paranormal afterlife beliefs rather than afterlife beliefs more broadly. However, this could also be advantageous in that it arguably presents a range of potential life after death beliefs identified by a similar set of theoretical frameworks, rather than attempting to incorporate a much wider range of constructs under a single measure. This would arguably give further nuanced data about survival beliefs that can currently be gleaned by the smaller number of life after death items in existing paranormal belief measures (e.g. Osarchuk & Tatz, 1973; Thalbourne, 1995; Tobacyk, 2004). As evidenced in the previous literature, it also includes phenomena for life after death that both parapsychologists and anomalistic psychologists would arguably broadly agree upon, and would pertain to items

that would describe potential beliefs related specifically to the *survival hypothesis* (e.g., see Gauld, 1977) although it certainly does not exhaust all theoretical accounts for post-mortem survival posited within the discourse of recent decades (e.g. Braude, 2003; Coly & McMahon, 1993; Kelly, Crabtree & Marshall, 2015; Storm & Thalbourne, 2006; Sudduth, 2016).

Although the current results rely on initial findings with limited control variables, SBQ has demonstrated internal consistency, with good reliability across a reasonably large population sample size comprising of members of the general public both in the UK and further afield. For concurrent validity purposes, it has also arguably demonstrated comparability with the other measures used. For purposes of construct validity, it could be argued that the SBQ shares similar theoretical frameworks with RPBS, yet further investigates life after death beliefs specifically. It would be therefore advantageous to further explore construct validity for SBQ with a larger sample size to build on the current data, and particularly to measure against other scales for both convergent and discriminant validity. This would arguably give further clarification as to the theoretical life after death frameworks underpinning SBQ.

There were a number of limitations with regard to the present study. Descriptive information gathered was limited. For example, age, ethnicity, socioeconomic status and levels and *type* of education were not recorded. This additional information would have further benefited the information about study participants and additional key variables that may associate with or influence life after death beliefs. In terms of sex difference, there were considerably more women than men taking part in the study, which influenced the statistical results of the study, and a more equitable split between men and women would be beneficial for future research.

With regard to utilising the SBQ, scores on the questionnaire were significantly correlated with scores for each of the other measures. However, it is debatable as to whether items on SBQ had potentially confounding similarity to items on the spiritualism subscale of the RPBS, and therefore further examination of SBQ as a comparable to wider paranormal beliefs may benefit from, for example, utilising an alternative scale related to paranormal beliefs, such as, for example, the 'Sheep-Goat Scale' (Thalbourne, 1995). However, items on other RPBS subscales and all other measures were arguably appropriate for empirical measurement, generating results that would appear to indicate relationships between life after death belief with wider paranormal belief, religiosity and individual differences.

In conclusion, the study has demonstrated that SBQ is a measure that could be utilised with a larger sample size to further investigate that relationship between life after death beliefs and other factors related to such beliefs (e.g. individual, cross-cultural differences etc.). Further research comprising SBQ with a larger sample size is therefore recommended, including greater sample equity for gender, and controlling for other factors such as age, education and socioeconomic status. Further use of the SBQ is also recommended to measure associations of afterlife beliefs with nationality, with additional control variables for cultural differences recommended. Finally, extant research has raised numerous issues relating to after-life beliefs, our results only show that paranormal

and religious beliefs play an interesting role, but future studies should also consider additional factors (as highlighted in the introduction). Such future research would potentially contribute to widening the current psychological exploration of the relationship between life after death beliefs with other related beliefs and individual differences.

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## APPENDIX 1: Survival Beliefs Questionnaire (SBQ)

We are interested in people's beliefs relating to the notion of life after death. The 'survival hypothesis' refers to the idea that some aspect of the personality (a 'soul'?) may survive death in some form or another, and that communication with the dead might be possible. Please identify the extent to which you agree with the following statements:

	Strongly disagree			Uncertain			Strongly agree
	1	2	3	4	5	6	7
1. I believe in ghosts	1	2	3	4	5	6	7
2. I think that my soul will continue to exist after I die	1	2	3	4	5	6	7
3. Some people (mediums) can communicate with the dead	1	2	3	4	5	6	7
4. When you die your soul can be 'reborn' in another body (reincarnation)	1	2	3	4	5	6	7
5. After death there is an afterlife	1	2	3	4	5	6	7
6. Ghosts are able to interact with living beings	1	2	3	4	5	6	7
7. It is possible to hear the voices of the dead and record them via electronic equipment	1	2	3	4	5	6	7
8. It is possible to take photographs of ghosts	1	2	3	4	5	6	7
9. Some houses, or locations are haunted	1	2	3	4	5	6	7
10. It is possible for nonphysical entities to interact with the physical world	1	2	3	4	5	6	7
11. Poltergeists (noisy, mischievous spirits) exist	1	2	3	4	5	6	7
12. Ouija boards can be used to contact the dead	1	2	3	4	5	6	7

13. Animals (like cats and dogs) are sensitive to ghosts and spirits	1	2	3	4	5	6	7
14. Some people have a guardian angel watching over them	1	2	3	4	5	6	7
15. It is possible for evil spirits to take possession over someone's body	1	2	3	4	5	6	7
16. I do not believe in life after death	1	2	3	4	5	6	7
17. Demons and evil spirits can be 'called up' and their power harnessed	1	2	3	4	5	6	7
18. Some people can sense when a loved one has died	1	2	3	4	5	6	7

**Scoring instructions.**

Sum the scores for each item, noting that item 16 is reverse scored  
Maximum score is thus 126