

Keywords

Locus of Control, Religious Faith, Religion, Paranormal Beliefs

Kurzzusammenfassung

Ziel dieser Studie war die Untersuchung der Rolle der individuellen Kontrollüberzeugungen, der Stärke des religiösen Glaubens sowie der religiösen Zugehörigkeit (Muslim, Christ, Jude, Hindu, Atheist/Agnostiker) für den paranormalen Glauben.

Einer Stichprobe von männlichen und weiblichen Personen mit verschiedenen ethnischen und religiösen Hintergründe wurden das „Santa Clara Strength of Religious Faith Questionnaire (SCSORF)“, die „Locus of Control Scale“ und die „Revised Paranormal Belief Scale“ vorgegeben sowie demographische Informationen erhoben.

Die Ergebnisse der Studie zeigen die Annahme bestätigt, dass der Glaube an externe Kontrolle mit einem höheren Ausmaß an paranormalem Glauben assoziiert ist. Die Zusammenhänge zwischen religiöser Zugehörigkeit, Glaubensstärke und paranormalem Glauben waren signifikant. Keine Unterschiede zeigten sich zwischen männlichen und weiblichen Probanden in den Kontrollüberzeugungen, im paranormalen Glauben und im religiösen Glauben. Die Ergebnisse verweisen auf die Komplexität der Beziehungen zwischen religiösem und paranormalem Glauben und deren Untersuchung aufgrund ihrer multidimensionalen Natur. Vorschläge für zukünftige Studien in diesem Bereich werden präsentiert.

Schlüsselwörter

Kontrollüberzeugungen, Religion, religiöser Glauben, paranormaler Glauben

1. Introduction

Paranormal beliefs are “those which, if genuine, would violate basic limiting principles of science” (Broad, 1953; Tobacyk & Milford, 1983). Paranormal beliefs encompass ideologies in a range of these phenomena such as superstitious beliefs (e.g., black cats and breaking mirrors cause bad luck), precognition (e.g., psychics and astrologers can predict the future), Psi (e.g., some people can move objects with the power of their mind), and a host of others (Dudley, 1999). These beliefs have been a focus point of general public discussion for a long time, stimulating seemingly never ending debates. Sociologists refer to this occurrence as the “occult renaissance” (Truzzi, 1971); however, psychological research on the subject has been relatively limited. The phenomenon by its nature is difficult to measure and analyse through scientific measures. Tobacyk & Milford (1983) came up with the Paranormal Belief Scale (PBS) to measure paranormal belief at different specific subscale levels. The PBS remains the most widely-used measure for this phenomenon ever since (Goulding & Parker, 2001).

The deprivation theory serves the foundation for much of the research examining the social correlates of paranormal beliefs (Rice, 2003). This theory argues that paranormal beliefs provide people with coping mechanisms to face the psychological and physical challenges of disadvantaged social and economic status (Glock & Stark 1965; Stark & Bainbridge 1980). It explains why belief in the paranormal is expected to be higher among marginal social groups, such as minorities and the poor. This is because these groups face a range of challenges due to their circumstances, many of which they perceive to be out of their control to overcome. Ideas such as these have spurred the argument that paranormal beliefs are closely associated with the sense of control one perceives to have in life.

Evidence suggests, on gender differences, that women show higher levels of superstitious beliefs than men (Scheidt, 1973; Dag, 1999; Vyse, 1997; Wolfradt, 1997; Bourque 1969; Greeley, 1975). But, it is the personality factor, locus of control, relating to paranormal belief, which has received greater interest from researchers and investigators. Locus of control is “one’s perception of the extent to which one is the active, causal agent in determining one’s own history” (Nehrke, Belucci, & Gabriel, 1978). It is classically categorised by Rotter’s (1966) Locus of Control Scale into either “Internal”, a perception of personal responsibility over one’s life events, or “External”, a perception of life events being dependent on fate, luck, or other external factors.

According to the learned helplessness theory (Abramson, Seligman, & Teasdale, 1978; Maier & Seligman, 1976), some people believe they have no control over life situations and expect to fail regardless of their efforts. As a result, they associate global and internal attributions with life events, as opposed to specific and external ones. They exaggerate a failure by expecting it in all aspects of their lives (global), and they blame themselves and their capabilities (internal). Thus, the attributions made about the failures negatively affect the nature of their post-failure performance (Mikulincer, 1986).

Other studies demonstrate that superstitious beliefs increase in ambiguous, uncertain, or uncontrollable (external) settings (Keinan, 1994; Padgett & Jorgenson, 1982; Malinowski, 1954). In such scenarios, resorting to superstitions may imply a sense of control (Blackmore & Troscianko, 1985; Irwin 1992), or at least offer an understanding as to why control may not be possible (Ayeroff & Abelson, 1976, Langer, 1975). These findings have led scientists to use the Internal-External Locus of Control variable (Rotter, 1966) to investigate the mediators of such

beliefs. Studies on the direct relationship between paranormal beliefs and locus of control have concluded that high paranormal beliefs are positively linked to “external” locus of control (Rotter, 1966; Johoda, 1970; Scheidt, 1973; Jones, Russel, & Nickel, 1977; Tobacyk, 1988; Tobacyk, Nagot, & Miller, 1988; Groth-Marnat & Pegden, 1998).

Extensive research has also been made on the relationship between religious faith and paranormal beliefs. The results have generally been inconclusive and at times contradictory (Orenstein, 2002). According to Broad (1949), superstitions intensify external source of control whilst religious beliefs emphasise internal control. Whilst superstitions shift responsibility and control to external objects and behaviours, most religions emphasise the importance of being personally responsible for one’s thoughts and actions relating them to God’s will and direction. Thalbourne and O’Brien (1999) have established, on the other hand, that spiritualists and those with no religious affiliation have the highest belief in the paranormal. Emmons and Sobal (1981) agree with this view, suggesting that paranormal beliefs serve as a substitute approach to define and understand life for those outside of mainstream religion. This phenomenon is known as the substitution hypothesis.

Overall, many studies have found a positive correlation between religiosity and paranormal beliefs (Hay & Morisy, 1978; Buhrmann & Zaugg, 1983; Orenstein, 2002; Thalbourne & Hensley, 2001). However, several studies have also found no correlation between religious beliefs and paranormal beliefs (Ellis, 1988, Rice, 2003; Greeley 1975; Wuthnow 1978) or superstitious rituals (Bleak & Frederick, 1998). Some experiments have even found an inverse relationship between the two factors, arguing that high paranormal beliefs are associated with low religiosity

and vice versa (Emmons & Sobal, 1981; Harold & Eve, 1986; Tobacyk & Wilkinson, 1990; Beck & Miller, 2001).

This current study aims to contribute to resolving this debate. Findings that stimulate this debate fall into three main groups. The first group supports the psychological explanation by demonstrating a positive relationship between conventional religiosity and paranormal beliefs (Wuthnow, 1978; Irwin, 1993; Beit-Hallahmi & Argyle, 1997; Goode, 2000; Thalbourne & Hensley, 2001; Orenstein, 2002; Francis, Williams, & Robbins, 2006). The second group supports the theological perspective by showing a negative relationship between self-assessed importance of religion and items related to the devil, astrology, extra-sensory perception and reincarnation (Duncan, Donnelly, & Nicholson, 1992). The third group supports neither psychological nor theological perspectives due to inconsistent findings (Ellis, 1988; Thalbourne & O’Brien, 1999; Krull & McKibben, 2006). This group concludes that the relationship between religious and classical paranormal beliefs is more complex and varied than the two explanations above suggest.

To further investigate the dichotomous nature of religious and classic paranormal beliefs via the substitution hypothesis, Goode’s (2000) findings present the patterns found specifically within religious paranormal research. Americans who believe in religious paranormal phenomena are mostly women, African American, and less educated. For example, women believe in the devil, heaven and hell, and creationism more than men do. Goode (2000) also shows that paranormal beliefs are more common among rural residents than among urban dwellers. The relationship with age is more variable. People of all ages are equally likely to believe in heaven and hell, but the young are more likely

than the elderly to believe in the devil and less likely to believe in creationism.

Classic paranormal beliefs, on the other hand, are more inconsistent in their relationship with social factors, complicating the multidimensional nature of paranormal beliefs even further. With respect to sex, women believe in ghosts, communication with the dead, extrasensory perception (ESP), and astrology more than men; however, men are more likely to believe in UFOs and alien visits (Goode, 2000; Fox, 1992). Women are also believed to be more likely to acquire New Age spirituality (Levin, Taylor, & Chatters, 1994; Miller & Hoffman 1995), but Mears and Ellison (2000) dispute this pattern.

The inconsistency of results is suggested to be due to the nature of all investigations being limited to explicit measurements, offering intentional control over responses, which makes them susceptible to bias due to social inhibition, and cultural expectations. Devoutly religious individuals may also hold certain paranormal beliefs, but keep these beliefs to themselves as their religious belief system forbids such explanations (as most Christian, Jewish and Islamic religions would) (Batson, Schoenrade, & Ventis, 1993; Spark, 2001).

Another reason why previous results for the relationship between religious belief and paranormal belief are difficult to compare or generalise is due to the heterogeneity of the samples examined. In most studies, samples differ not only with respect to ethnicity or nationality but also, fundamentally, with respect to their religious affiliation. Hergovich, Schott, and Arendasy (2005), for instance, suggest that intrinsic religiosity (how religious one perceives oneself to be or reports it) is a very important predictor of one's paranormal beliefs. They propose a modified version of the substitution hypothesis which states that for participants without any

religious affiliation, paranormal beliefs can act as a substitute for traditional religion, and if they report themselves as being religious, then they generally believe in both religion and the paranormal. However, most of this group believes in neither paranormal phenomena nor traditional religion and therefore score lowest on most religious belief measures.

Therefore, it can be suggested that people without religious affiliation perceive paranormal and religious phenomena as ultimately the same. The study opens a new dimension in paranormal studies, demonstrating the importance of including different religious affiliations when studying paranormal beliefs. It also shows that both religiosity and paranormal belief are multidimensional constructs and one cannot simply determine whether paranormal beliefs are or are not related to religious beliefs.

Finally, research has also found that many turn to prayers and religious beliefs to feel in control when battling depression and loneliness (Hood et al., 1996). Moreover, religious beliefs are found to have a positive relationship with mental (Hood et al., 1996) and physical health (Brennen & Heiser, 2005), particularly in the more severely ill (McFadden, 2005). Oxman, Freeman, and Manheimer (1995) have even found that risk of death of cardiac patients was three times more likely when they were not confiding in the strength and security of religion. However, Lewis, Edwards, and Burton (2009) found that strongly religious individuals may regard their destiny to be in God's hands and their responses, therefore, resemble an external locus of control.

It can, therefore, be suggested that locus of control and religious beliefs also play a significant part in many aspects of individual's lives similar to the way paranormal beliefs are thought to do

so by battling learned helplessness and protecting self-esteem. As a result, attempts at resolving the relationship between these three phenomena are not only a matter of interest for scientific researchers, but also for the general public. Once the nature of these relationships is better understood, the knowledge can be utilised in many aspects of professional and personal life.

This study has four main objectives. First, it aims to replicate past research findings suggesting that possessing an external locus of control, measured using Rotter's (1966) Locus of Control Scale, correlates with higher paranormal beliefs, measured by Tobacyck's (1988) Revised Paranormal Belief Scale. Second, this study aims to investigate the relationship between religious faith and paranormal beliefs using a relatively new scale, the Santa Clara Strength of Religious Faith Questionnaire (SCSORF) (Plante & Boccaccini, 1997), which scores participants on their strength of religious faith independent of their religious affiliation.

We predict a relationship between scores on Tobacyck's (1988) Revised Paranormal Belief Scale and scores on Santa Clara Strength of Religious Faith Questionnaire. However, previous research has resulted in conflicting findings on the direction of the relationship between religious faith and paranormal beliefs. Nonetheless, we hope our findings will contribute to resolving this ambiguity regarding the effect of religious faith on paranormal beliefs, when any effects due to different religious affiliations are controlled. Another benefit of this tool for measuring faith is that it can offer an explanation as to how individuals belonging to no religious affiliation, who still consider themselves spiritual, understand and define paranormal beliefs.

As stated, previous findings have strongly supported the notion that women have stronger paranormal beliefs and religious faith. Locus of

control has not received consistent evidence regarding gender differences. Our experiment will also attempt to seek possible gender differences in individuals' scores on paranormal beliefs, locus of control, and strength of religious faith.

Finally, this experiment will explore the contribution of religious affiliation towards an individual's score on Tobacyck's (1988) Revised Paranormal Belief Scale. We hope to expand on Hergovich's (2005) suggestions regarding the contribution of different religions by comparing samples from a variety of religious backgrounds. This will provide greater insight into how paranormal beliefs are portrayed in different religions and whether the encouragement or discouragement of such beliefs plays a part in individual's acquiring such beliefs.

2. Methods

2.1 Participants

A total of 153 healthy participants (55 men) aged between 18 and 60 years took part in the study. Mean age of participants was 21.95; (standard deviation 7.40). They were sampled opportunistically in London. 145 were students from Queen Mary University of London and Barts and the London School of Medicine and Dentistry. The remaining participants were London citizens. Participants came from a variety of ethnic and religious backgrounds. Personal identifiers were used to maintain anonymity. Written informed consent was obtained from all participants. Appropriate information about the study was provided beforehand along with a written and verbal debriefing afterwards. Participants received £5 for taking part in the study. This experiment was approved by Queen Mary Research Ethics Committee.

2.2 Design

The experiment consisted of four investigations. First there was a correlational analysis between the three variables: scores on Locus of Control, Santa Clara Strength of Religious Faith (SCSORF), and Revised Paranormal Belief Scale. The second investigation used a between-subjects design with the independent variable being locus of control (internal or external; dichotomy achieved via a median split of the questionnaire data), and the dependent variable being overall scores on the Revised Paranormal Belief Scale. The third investigation was also a between-subjects design. The independent variable here was Religious Affiliation with five levels (Muslim, Christian, Jewish, Hindu, Atheist/Agnostic), and the three dependent variables were scores on Santa Clara Strength of Religious Faith Questionnaire (SCSORF), Locus of Control Scale and the Revised Paranormal Belief Scale. The final investigation looked at gender differences between strength of religious faith, locus of control and paranormal beliefs.

2.3 Materials

The questionnaires used in this study included all questions from Rotter's Internal-External Locus of Control Scale (I-E LCS; Rotter, 1989), the Santa Clara Strength of Religious Faith Questionnaire (SCSORF; Plante & Boccaccini's 1997), and the Revised Paranormal Belief Scale (RPBS; Tobacyk, 1985). These three scales were presented in one of the following three orders to counter-balance and minimize order effects: 1) I-E LCS, RPBS, SCSORF; 2) RPBS, SCSORF, I-E LCS; 3) SCSORF, I-E LCS, RPBS. Prior to presentation of the three scales, the questionnaire asked for demographic information such as age, sex, religious background, and current religious affiliation (Religion).

The rating system for the Locus of Control Scale involved circling either statement A or B which

one mostly agreed with per item. This scale included 29 items, 6 (questions 1, 8, 14, 19, 24, 27) of which were filler questions placed in order to avoid demand characteristics. High scores on the scale indicated having an 'external' locus of control and low scores indicated an 'internal' locus of control (See Locus of Control Questionnaire, Appendix A).

The RPBS was scored on a 7-point Likert Scale with responses ranging from 1=Strongly Disagree to 7=Strongly Agree. The total score was calculated by summing up the scores for all 26 items. The RPBS comprised 7 Subscales: 1) Traditional Religious Belief; 2) Psi; Witchcraft; 4) Superstition; 5) Spiritualism; 6) Extraordinary Life Form; and 7) Precognition. The total for each subscale was the calculated mean of the responses to its associated questions (See Revised Paranormal Belief Scale, Appendix B).

Finally, participants scored the SCSORF Questionnaire using a 4-point Likert Scale (1=Strongly Disagree, 2=Disagree, 3=Agree, and 4=Strongly Agree). The total sum of scores on the 10 items was calculated. (See Santa Clara Strength of Religious Faith Questionnaire, Appendix C).

2.4 Procedure

The experiment took place in sufficiently lit and quiet library study rooms at Queen Mary University, with groups of 5 to 10 participants asked to complete the questionnaire at one time. Participants were first given an information sheet explaining the purpose of the study, along with a consent form to sign explaining their rights (Information about the Study, Appendix D). Verbal instructions were provided to ensure full understanding of the task. To eliminate order effects, each participant was handed one of three variations of the questionnaire, differing only in the order of which the three scales (I-E LCS, RPBS, and SCSORF) were presented.

The questionnaire began with the “General Background Information” section, collecting participants’ demographic information such as age, gender, subject studied, ethnicity, religious background and current religious orientation (Religion). For completeness, data regarding frequency of religious practice were also collected. Following on from that, the three main questionnaires were presented. After completion of the full questionnaire, participants were provided with both a verbal and written debrief explaining the aims and purpose of the research project.

2.5 Data Analysis

As no significant differences were found between religious background and current reli-

gious affiliation, only religious affiliation was included in the analysis. Six participants belonging to Buddhist or other religions were excluded from this variable (as they were too few in number to allow meaningful analyses), leaving 147. Despite this, their data were included in analyses investigating the relationship between locus of control, paranormal beliefs, and strength of faith.

3. Results

Table 1 provides summary descriptive statistics for scores on Locus of Control Scale, Santa Clara Strength of Religious Faith (SCSORF), and the Revised Paranormal Belief Scale for five categories of Religion (Muslim, Christian, Jewish, Hindu, and Atheist/Agnostic).

Religious Affiliation (Religion)	Locus of Control	Santa Clara Strength of Religious Faith	Revised Paranormal Belief Scale
Muslim	12.94 (3.59)	33.58 (6.18)	86.21 (16.74)
Christian	11.47 (4.21)	29.05 (8.05)	86.79 (21.49)
Jewish	11.22 (3.35)	28.89 (5.40)	69.79 (24.39)
Hindu	12.25 (3.62)	26.17 (7.85)	105.08 (21.83)
Atheist/Agnostic	11.78 (4.22)	14.76 (5.97)	60.49 (20.38)

Table 1 The Means (standard deviations) of scores on Locus of Control Scale, SCSORF, and the Revised Paranormal Belief Scale in Muslims, Christian, Jewish, Hindu, and Atheist/Agnostic Religions.

Table 2 shows results from a preliminary correlational analysis between participants' scores on Locus of Control Scale, Santa Clara Strength of

Religious Faith Questionnaire (SCSORF), and Revised Paranormal Belief Scale.

	Locus of Control	Santa Clara Strength of Religions Faith SCSORF	Revised Paranormal Belief Scale
Locus of Control (total 23)	—		
Santa Clara Strength of Religions Faith SCSORF (10-40)	.120	—	
Revised Paranormal Belief Scale	.180*	.502**	—

** p < 0.01 level.

* p < 0.05 level.

Table 2 Correlations between scores on Locus of Control Scale, SCSORF and the Revised Paranormal Belief Scale for total sample (N = 153).

A Pearson's correlational analysis was computed to assess the relationship between scores on Locus of Control Scale, SCSORF Questionnaire, and Revised Paranormal Belief Scale. There was a significant moderate positive correlation between scores on Revised Paranormal Belief Scale and SCSORF Questionnaire, $r(153) = +0.502$, $p < 0.001$. There was a weak positive correlation scores on Revised Paranormal Belief Scale and Locus of Control Scale

$r(153) = +0.180$, $p = 0.026$. There was no significant correlation between scores on Locus of Control Scale and SCSORF Questionnaire $r(153) = 0.120$, $p = 0.139$.

Table 3 provides summary descriptive statistics for participants' overall scores on the Revised Paranormal Belief Scale depending on their Locus of Control (Internal or External).

	Locus of Control	N	Mean
Score on Revised Paranormal Belief Scale	Internal	69	75.72 (2.71)
	External	84	82.07 (21.43)

Table 3 Means (standard deviations) for scores on Paranormal Beliefs of participants with Internal or External Locus of Control.

Participants with external locus of control scored higher on the Revised Paranormal Belief Scale (mean = 82.07, sd = 21.43) than the group of participants with internal locus of control (mean = 75.72, sd = 25.71). An independent-samples t-test showed that this was significant in line with predictions ($t(151) = -1.666$, $p = 0.049$, one-tailed).

A one-way multivariate analysis of variance (MANOVA) was performed to further investigate the relationship between religious affiliation and scores on the Revised Paranormal Belief Scale; the Santa Clara Strength of Religious Faith Questionnaire and Locus of Control Scale. Preliminary assumption testing was conducted to check for homogeneity of variance-covariance matrices, and multicollinearity, with no violations noted. There was a significant multivariate difference between religious affiliation (Muslim, Christian, Jewish, Hindu, and Atheist-Agnostic) on the combined dependent variables, scores on Santa Clara Strength of Religious Faith, Locus of Control Scale, and Revised Paranormal Belief Scale, $F(12,370) = 17.487$, $p < 0.001$; Wilks' Lambda = 0.305; partial $\eta^2 = 0.327$. Analysis of each individual dependent variable, using a Bonferroni adjusted alpha level of 0.017, showed that there was no contribution by religious affiliation on scores on Locus of Control Scale, $F(4,142) = 1.005$, $p = 0.407$, partial $\eta^2 = 0.028$. The five religions differed in their scores on Santa Clara Strength of Religious Faith (SCSORF), $F(4,142) = 56.411$, $p < .001$, partial $\eta^2 = 0.614$ and in their scores on the Revised Paranormal Belief Scale, $F(4,142) = 18.999$, $p < .001$, partial $\eta^2 = 0.349$.

The first Bonferroni corrected post hoc tests showed that overall Muslims significantly differed from Hindus on Santa Clara Strength of Religious Faith (SCSORF) (means of 33.8 and 26.17 respectively), $p = 0.004$. Muslims also significantly differed from Atheist/Agnostics on

SCSORF (means of 33.8 and 14.76 respectively), $p < 0.001$. The SCSORF scores of the Christians significantly differed from the Atheist/Agnostics (means of 29.05 and 14.76 respectively), $p < 0.001$. Additionally, the SCSORF scores of the Jewish participants significantly differed with the Atheist/Agnostics (means of 28.89 and 14.76 respectively) $p < 0.001$. Finally, there was a significant difference in SCSORF scores between Hindus and Atheist/Agnostics (means of 26.17 and 14.76 respectively), $p < 0.001$. No other differences were significant. No other differences were significant. The second Bonferroni corrected post hoc tests showed that overall Muslims significantly differed from Hindus in Revised Paranormal Belief Scale scores (means of 86.21 and 105.08 respectively), $p = 0.025$. Muslims also significantly differed in the Revised Paranormal Belief Scale scores with Atheist/Agnostics (means of 86.21 and 60.49 respectively), $p < 0.001$. The Revised Paranormal Belief Scale scores of the Christians significantly differed with the Atheist/Agnostics (means of 86.79 and 60.49 respectively), $p < 0.001$. Moreover, the Revised Paranormal Belief Scale scores of the Jewish significantly differed with the Hindus (means of 69.79 and 105.08 respectively), $p = 0.001$. Finally, there was a significant difference in the Revised Paranormal Belief Scale scores between the Hindus ($M = 105.08$) and Atheist/Agnostics (means of 105.08 and 60.49 respectively), $p < 0.001$. No other differences were significant.

T-test analyses showed that there were no significant gender differences in scores on SCSORF, Locus of Control Scale, and Revised Paranormal Belief Scale. Furthermore, No meaningful differences were detected between Religious Affiliation, scores on Locus of Control Scale, and scores on Santa Clara Strength of Religious Faith Questionnaire across the seven subscales of the Revised Paranormal Belief Scale.

4. Discussion

This study, as stated, had four aims: 1) to establish the previously detected relationship between paranormal beliefs and external locus of control; 2) to clarify the nature of the relationship between strength of religious faith and paranormal beliefs; 3) to detect any existing gender differences regarding individuals' strength of faith, locus of control, and paranormal beliefs; and 4) to explore the contribution of religious affiliation on level of paranormal beliefs.

Our findings demonstrated that, as expected, individuals with an external locus of control were more likely to have stronger paranormal beliefs than individuals with an internal locus of control. These findings are in concordance with previous reports (Rotter, 1966; Johoda, 1970; Scheidt, 1973; Jones et al., 1977; Tobacyk, 1988; Tobacyk, Nagot, & Miller, 1988; Groth-Marnat & Pegden, 1998). However, the relationship between these two variables was found to be weak. This suggests that individuals differ to a considerable degree on this notion. It also suggests that for some people paranormal beliefs may in fact offer a greater sense of personal internal control.

The significant difference between internals' and externals' paranormal beliefs only arose due to the one-tailed nature of the hypothesis. Looking at these results, although initially they seem to support the deprivation theory (Rice, 2003), which proposes paranormal beliefs to serve as a protective mechanism to fight against learned helplessness (a perception of lacking personal control over life events; i.e. external locus of control). The determinant of the direction of relationship can be the nature of the specific paranormal belief (i.e. religious or classic; Rice, 2003), or the frequency of personal engagement with activities related to those beliefs (McGarry

& Newberry, 1981), or other factors yet to be recognised.

No gender differences were detected between individuals' paranormal beliefs, locus of control, or strength of faith. This may have been because our sample consisted of almost double the number of females than males. It is best for future studies to ensure that their sample comprises relatively equal number of both genders when conducting such analyses.

A moderately significant relationship between strength of religious faith and paranormal beliefs was observed, supporting the notion that people with stronger religious faith, regardless of its type, also have stronger paranormal beliefs. The effect of religious affiliation on locus of control, strength of religious faith, and the degree of paranormal beliefs was examined. Religion had an overall effect on the three factors combined. However, no significant differences were found between locus of control and religious affiliation. Future studies can explore why this may have been the case by using different models and scales. The Post-critical Belief Scale (Duriez, Soenens, & Hutsebaut, 2005) is a promising new model which measures two factors of religion across two dimensions (four quadrants), exclusion vs. inclusion of transcendence, and symbolic vs. literal interpretations of the content. This scale is proven valid (Lauri, Lauri, & Borg, 2011) and could offer a more elaborate measurement of religion. Nevertheless, religious affiliation did govern participants' strength of religious faith and their level of paranormal beliefs.

Looking at differences in strength of faith between different religions, Muslims had higher strength of faith than Hindus and the Atheist/Agnostics. The Christians, Jewish, and Hindus also showed greater strength of faith than the Atheist/Agnostics. This implies that individuals

belonging to any of the four examined traditional religions hold higher strength of faith than Atheist/Agnostic individuals. Thus, despite the SCSORF Questionnaire measuring level of faith regardless of any religious associations, Atheist/Agnostic individuals seem to generally be more sceptical and show less interest towards matters that work purely based on the essence of faith.

Among the four religions, the fact that Muslims scored highest and Hindus scoring lowest on strength of faith may very well have been due to our sample consisting of mostly Muslims and considerably fewer Hindus. That aside, the outcome specified that there is overall not so much difference in strength of religious faith between individuals of different traditional religions.

Furthermore, considering the effects of religious faith on level of paranormal beliefs, Muslims showed fewer paranormal beliefs than Hindus but more paranormal beliefs than the Atheist/Agnostics. Christians also had a greater degree of paranormal beliefs than the Atheist/Agnostics. Moreover, Hindu participants showed substantially higher paranormal beliefs than the Jewish and Atheist/Agnostics.

These findings firstly suggest that most traditional (Is Hinduism traditional? Then the statement on above red comment is questionable) religions (e.g. Christianity, Islam, and Hinduism) with the exception of Judaism consist of and are open towards notions arguably considered as paranormal. They are filled with inspirational stories involving miracles, angels, the devil, heaven and hell, and of course God, none of which can be proven with concrete scientific evidence.. Therefore, there seems to be a positive association between religion and paranormal beliefs. This is certainly the case where all beliefs outside of science are considered as para-

normal and supernatural (Wuthnow, 1978; Irwin, 1993; Beit-Hallahmi & Argyle, 1997; Goode, 2000; Thalbourne & Hensley, 2001; Orenstein, 2002; Francis, Williams, & Robbins, 2006). The paranormal nature of religions may be due to their entire philosophy of offering people hope of a life beyond the material (science), and explaining a divine reason for man's existence on Earth.

Secondly, the results show that Hindus are more accepting of paranormal beliefs than the Jewish. How can this be explained? Initially, one can refer to the theological explanation of the relationship between religion and paranormal (Duncan, Donnelly, & Nicholson, 1992; Boyd, 1996). This notion can be expanded to imply that traditional monotheistic religions such as Judaism ban their followers to have any spiritual or supernatural beliefs, and this is not the case for polytheistic religions such as Hinduism, which in fact embrace openness to spiritual and supernatural ideas. This potentially leads the first group to hold back on reporting their beliefs, as they go against their religious rules, while the latter openly express them.

This pattern has been more thoroughly explained by Solomon, Greenberg, Pyszczynski, Cohen, and Ogilvie (2010). They argue that it is mainly down to different religions approaches to explaining souls and the afterlife. Whilst some monotheistic religions such as Islam and Christianity provide a clear framework for the afterlife and soul, others such as Judaism place greater emphasis on being the best one can be in this present life. Such ideas encourage Jewish members to focus on this world predominantly and discourage them from openly exploring ideas beyond this world. On the other hand, more ancient polytheistic religions such as Hinduism have a foundation built upon a series of supernatural and spiritual ideas of the soul and

afterlife. It is therefore likely that the uniqueness of individuals' type and level of paranormal beliefs depends strongly on their upbringing in a particular religious culture. It is not simply being religious or not that determines the nature of paranormal beliefs and perspectives on life events, but also the teachings within a specific religion that are socially exchanged by its followers. These ideas may prove fruitful for research in this field if explored further in the future.

With regards to the association between paranormal beliefs and strength of religious faith, our experiment supported Hergovich et al. (2005). It is important for future studies to focus more on a range of different religious orientations when studying the association of religion and the paranormal as opposed to simplifying religiosity into a single universal scale.

It is reasonable to explore some limitations of this experiment. Firstly, it is possible that inconclusive results regarding the relationship between paranormal belief and religion are due to most researchers either investigating correlations between the two phenomena (Thalbourne & O'Brien, 1999; Thalbourne & Hensley, 2001) or differences between religious and nonreligious participants' paranormal beliefs (Williams, Taylor, & Hitze, 1989), but not both (Hergovich et al. 2005). This can lead to important pieces of information being hidden as a result of the chosen method of analysis.

A major topic of concern related to paranormal studies is the distinction between classic paranormal beliefs (e.g. extra-terrestrials or psychic healings) and religious paranormal beliefs (e.g. devil and angels or heaven and hell) (Rice, 2003). This particular study did not find any meaningful correlations, it may be that people with traditional religious beliefs view psychic phenomena as miracles or works by God. There-

fore, a religious person can score high on paranormal scales and yet personally not classify them as such. The opposite is also possible. Traditionally religious individuals may respond negatively to the terminology used in the statements regarding paranormal phenomena in measurement scales, simply because in their mind such phenomena are only explained under the umbrella of religion, and their religion prohibits acceptance of any other form of explanation for events in life.

This distinction has challenged the inclusion of 'traditional religious beliefs' as one of the eight subscales of Tobacyk's (1988) Paranormal Beliefs Scale. Following this notion, Francis, Lewis, Philipchalk, Lester, and Brown (1995) have gone far enough to propose a modified version of Tobacyk's (1988) Revised Paranormal Belief Scale which scores these two categories of paranormal beliefs entirely separately. It is now recommended that future research appreciates the distinction between these two types of paranormal beliefs and that models are routinely modified to take this matter into account.

Another limitation, which would be difficult to control in studies of this nature, was that the religious categories were solely based on current religious orientations. It must be noted, that some may report themselves as belonging to a religion simply because they have never come to question their background, but they may have yet moved very much away from the traditional practicing view of that religion. One must take a closer look at how to categorise these faiths and where to draw the boundaries. Inclusion of a variable such as 'frequency of traditional religious practice' may be a way to overcome this complexity.

The degree of involvement of individuals regarding their religious belief systems can serve

as an important factor determining the relationship between locus of control and paranormal beliefs (McGarry & Newberry, 1981). Tobacyk et al.'s (1988) study also implied that self-relevance of paranormal beliefs can be a crucial extra variable to consider in the future. This is the examination of whether individuals have personally experienced their stated beliefs (i.e. seeing a ghost or alien, being abducted or possessed, or observing a miracle) or whether they are consistent in behaving according to these beliefs.

Another matter of debate is the difference between religion and spirituality. There is a great deal of overlap between these two factors (McDonald, LeClair, Holland, Alter, & Friedman, 1995). It is very difficult to categorise individuals who are spiritual but not religious versus those who are both spiritual and religious (Koenig, 2008). The problem is that both religion and spirituality accept belief in supernatural spirits, whether in the form of God and the Holy Spirit or more abstract forms. Therefore it is important and yet very difficult to establish whether one construct plays a more significant part in development and preservation of supernatural beliefs.

The nature of spirituality, however, is undergoing changes (Rice, 2003). Since the counterculture movement of 1960s, a considerable population is replacing traditional religion with a more personalized moral and spiritual belief system (Roof 1993). These beliefs highlight personal choice, devalue religious authority, involve personal learning and growing, and are a complex mix of a range of religious and spiritual ideas (Orenstein 2002). Today people pick beliefs "cafeteria style" instead of associating with a strict religious sector. If this is true, then it is likely that inherited or learned psychological factors based on one's biological build up and past history are the main drive for acquiring

spirituality these days, and not socially structured traditional religions. Future research can therefore benefit from placing greater focus on such psychological factors when studying religious and paranormal beliefs.

There is a possibility that the well-established tools for measuring the three main factors, paranormal beliefs, locus of control, and religion, struggle to paint the full picture on these phenomena. A number of participants found the limited choices within the questionnaires not accurately portraying their feelings and thoughts about certain topics. Some even suggested that a qualitative measure, such as an interview, would have given them a much better opportunity to establish their beliefs more clearly. Although qualitative measures may serve a great purpose for better understanding these constructs, it is also important to evaluate the accuracy of quantitative scales frequently used on these topics and consider alternatives for the future.

A large body of research on paranormal beliefs has focused on only one subscale of the Paranormal Belief Scale (PBS), 'superstitions'. Additionally, the PBS only encompasses negative superstitions (e.g. breaking a mirror will cause bad luck) and ignores positive superstitions (e.g. carrying a lucky charm will bring good luck) (Alcock, 1981; Dag, 1999). That might be the reason why superstitions have frequently been linked with learned helplessness and lack of control (Irwin, 2000; Jahoda, 1970; Malinowski, 1954) or facing traumatic childhood experiences (French & Kerman, 1996; Irwin, 1992). However, referring to the effect of other "positive illusions" (Taylor, 1989), positive superstitions may actually be psychologically adaptive rather than maladaptive. This suggests that these beliefs can give one a greater sense of control over one's life, which might contribute to the weak correlations observed in this study between locus of control

and paranormal beliefs. As a result, Wiseman and Watt (2004) suggest that the PBS is an incomplete measure of superstitious belief and a way to start improving it is to consider the importance of both the positive and negative nature of these beliefs.

Another issue with the methodological tools had to do with Rotter's (1966) Locus of Control Scale. The 'black and white' nature of the responses frustrated many respondents and some strongly resisted picking one statement over the other. More specialised tools of measurement for locus of control have since been proposed which take a more multidisciplinary view towards the subject (Coan, 1974; Levenson, 1973; Paulhus & Christie, 1981). Particularly, Paulhus's (1983) model of three spheres of control (personal efficacy, interpersonal control, and socio-political control) is promising as a multidimensional assessment of locus of control. An example of an attempt to understand the relationship between such different dimensions of locus of control with the different subscales of paranormal beliefs can be found in Tobacyck et al.'s (1988) study.

Although Plante and Boccaccini's (1997) Santa Clara Strength of Faith Questionnaire served its unique purpose of assessing faith independent of religious orientation, the Religious Orientation Scale (ROS) (Allport and Ross 1967) and the quest scale (Batson and Schoenrade 1991) serve alternative valuable means to measure religion in future studies. The ROS offers a standard measure of religiosity that splits individuals into intrinsic (e.g. active personal "living" of religion) and extrinsic (e.g. social or utilitarian reasons behind acquiring religion and not personal growth) orientation groups, based on the source of motivation for adopting religion (Burriss 1999a). The quest orientation scores an individual's degree of open-mindedness regarding reli-

gious matters. High scores demonstrate a sceptical outlook upon the complexity of religious beliefs. The quest scale offers something unique to studies on religion (Burriss 1999b) and is important not to overlook in future studies.

Another matter to keep in mind is that most studies focus on individuals' explicit reports. Such information about beliefs in angels, telepathy, and witchcraft says little about the cognitive mechanisms or associations regarding such variables. As a result, some have suggested that implicit measurements of automatic processes may provide more sincere and concrete data and allow investigation of the relationships between them (Hill 1994; Schneider and Shiffrin 1977). Weeks, Weeks and Daniel (2008) have used a version of Greenwald, Mcghee, and Schwartz's (1998) Implicit Association Test (IAT), which measures associational strength between two constructs, to examine the link between religious (e.g. angels and prayers) and paranormal (e.g. witchcraft and ghosts) beliefs. Implicit measurements may therefore complete a set of data if taken into account.

Finally, the media have a strong influence over peoples' belief systems and their consideration of possibilities beyond direct experience (Weiss, 1969; Schramm & Roberts, 1971; Gerbner, Gross, Jackson-Beeck, Jeffries-Fox, & Signorielli, 1978). Therefore, the contribution of media shaping peoples' attitudes and beliefs regarding the paranormal, religion, and sense of control may be worthy of receiving greater focus by future researchers.

In conclusion, this experiment offers supporting evidence for the deprivation theory explaining the relationship between paranormal beliefs and external locus of control, as they remove personal blame through external and specific explanations of events. Despite this, it also attempts to explain inconsistencies by shedding

light on alternative scenarios whereby paranormal beliefs do in fact offer perceived internal control. It then highlights the complexity of any psychological investigations of religion or faith as a variable due to its multidimensional nature. In addition, it expands Hergovich et al.'s (2005) study by emphasising the role of religious affiliation on development of paranormal beliefs within a much wider range of different major religions (e.g. Christian, Muslim, Jewish, Hindu). As a result, this study has served its purpose in adding to existing records on these subjects and both confirming and challenging recent findings, whilst highlighting the issues and complexities associated with researching these topics. It offers ways to overcome these challenges, opening doors for innovative ways for future exploration of this topic area, and drawing closer to understanding the mystery of the relationship between locus of control, religion, and paranormal beliefs.

5. References

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6. Appendices

6.1 Appendix A

Locus of Control Scale

1	A	Children get into trouble because their parents punish them too much.
	B	The trouble with most children nowadays is that their parents are too easy with them.
2	A	Many of the unhappy things in people's lives are partly due to bad luck.
	B	People's misfortunes result from the mistakes they make.
3	A	One of the major reasons why we have wars is because people don't take enough interest in politics.
	B	There will always be wars, no matter how hard people try to prevent them.
4	A	In the long run people get the respect they deserve in this world
	B	Unfortunately, an individual's worth often passes unrecognized no matter how hard he tries
5	A	The idea that teachers are unfair to students is nonsense.
	B	Most students don't realize the extent to which their grades are influenced by accidental happenings.
6	A	Without the right breaks one cannot be an effective leader.
	B	Capable people who fail to become leaders have not taken advantage of their opportunities.
7	A	No matter how hard you try some people just don't like you.
	B	People who can't get others to like them don't understand how to get along with others.
8	A	Heredity plays the major role in determining one's personality
	B	It is one's experiences in life which determine what they're like.
9	A	I have often thought that what is going to happen will happen.
	B	Trusting to fate has never turned out as well for me as making a decision to take a definite course of action.

10	A	In the case of the well-prepared student there is rarely if ever such a thing as an unfair test.
	B	Many times exam questions tend to be so unrelated to course work that studying in really useless.
11	A	Becoming a success is a matter of hard work; luck has little or nothing to do with it.
	B	Getting a good job depends mainly on being in the right place at the right time.
12	A	The average citizen can have an influence in government decisions.
	B	This world is run by the few people in power, and there is not much the little guy can do about it.
13	A	When I make plans, I am almost certain that I can make them work.
	B	It is not always wise to plan too far ahead because many things turn out to be a matter of good or bad fortune anyhow.
14	A	There are certain people who are just no good.
	B	There is some good in everybody.
15	A	In my case getting what I want has little or nothing to do with luck.
	B	Many times we might just as well decide what to do by flipping a coin.
16	A	Who gets to be the boss often depends on who was lucky enough to be in the right place first.
	B	Getting people to do the right thing depends upon ability, luck has little or nothing to do with it.
17	A	As far as world affairs are concerned, most of us are the victims of forces we can neither understand, nor control.
	B	By taking an active part in political and social affairs the people can control world events.
18	A	Most people don't realize the extent to which their lives are controlled by accidental happenings.
	B	There really is no such thing as "luck."
19	A	One should always be willing to admit mistakes.
	B	It is usually best to cover up one's mistakes.

20	A	It is hard to know whether or not a person really likes you.
	B	How many friends you have depends upon how nice a person you are.
21	A	In the long run the bad things that happen to us are balanced by the good ones.
	B	Most misfortunes are the result of lack of ability, ignorance, laziness, or all three.
22	A	With enough effort we can wipe out political corruption.
	B	It is difficult for people to have much control over the things politicians do in office.
23	A	Sometimes I can't understand how teachers arrive at the grades they give.
	B	There is a direct connection between how hard I study and the grades I get.
24	A	A good leader expects people to decide for themselves what they should do.
	B	A good leader makes it clear to everybody what their jobs are.
25	A	Many times I feel that I have little influence over the things that happen to me.
	B	It is impossible for me to believe that chance or luck plays an important role in my life.
26	A	People are lonely because they don't try to be friendly.
	B	There's not much use in trying too hard to please people, if they like you, they like you.
27	A	There is too much emphasis on athletics in high school.
	B	Team sports are an excellent way to build character.
28	A	What happens to me is my own doing.
	B	Sometimes I feel that I don't have enough control over the direction my life is taking.
29	A	Most of the time I can't understand why politicians behave the way they do.
	B	In the long run the people are responsible for bad government on a national as well as on a local level.

6.2 Appendix B

Revised Paranormal Belief Scale

Please put a number next to each item to indicate how much you agree or disagree with that item. There are no right or wrong answers. This is just a sample of your own beliefs and attitudes.

1	2	3	4	5	6	7
Strongly Disagree	Moderately Disagree	Slightly Disagree	Uncertain	Slightly Agree	Moderately Agree	Strongly Agree

1. The soul continues to exist though the body may die.
2. Some individuals are able to levitate (lift) objects through mental forces.
3. Black magic really exists.
4. Black cats can bring bad luck.
5. Your mind or soul can leave your body and travel (astral projection).
6. The abominable snowman of Tibet exists.
7. Astrology is a way to accurately predict the future.
8. There is a devil.
9. Psychokinesis, the movement of objects through psychic powers, does exist.
10. Witches do exist.
11. If you break a mirror, you will have bad luck.
12. During altered states, such as sleep or trances, the spirit can leave the body.
13. The Loch Ness monster of Scotland exists.
14. The horoscope accurately tells a person's future.
15. I believe in God.
16. A person's thoughts can influence the movement of a physical object.
17. Through the use of formulas and incantations, it is possible to cast spells on persons.
18. The number "13" is unlucky.
19. Reincarnation does occur.
20. There is life on other planets.
21. Some psychics can accurately predict the future.
22. There is a Heaven and a Hell.
23. Mind reading is not possible.
24. There are actual cases of witchcraft.
25. It is possible to communicate with the dead.
26. Some people have an unexplained ability to accurately predict the future.

6.3 Appendix C

Santa Clara Strength of Religious Faith Questionnaire

Please answer the following questions about your religious faith using the scale below to indicate how much you agree or disagree with each statement. There are no right or wrong answers.

1 Strongly Disagree	2 Disagree	3 Agree	4 Strongly Agree
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- 1. My religious faith is extremely important to me.
- 2. I pray daily.
- 3. I look to my faith as a source of inspiration.
- 4. I look to my faith as providing meaning and purpose in my life.
- 5. I consider myself active in my faith or church.
- 6. My faith is an important part of who I am as a person.
- 7. My relationship with God is extremely important to me.
- 8. I enjoy being around others who share my faith.
- 9. I look to my faith as a source of comfort.
- 10. My faith impacts many of my decisions.

6.4 Appendix D

Information About the Study

Aim of the study:

The aim of this study is to examine the relationships between Faith, level of Paranormal Beliefs, and Locus of Control. This study is conducted as part of a third year dissertation for the Bsc Psychology course at Queen Mary University of London.

Your role:

You will be asked to complete a questionnaire with four parts. Each will involve short statements and you will be asked to indicate to what degree these statements describe you. The estimated duration of the study is 30 minutes.

Your rights:

Participation in this study is entirely voluntary, and you have the right to withdraw at any time. You also have the right to request your data to be removed before, during, or after completion of the questionnaire. All data obtained in this study will be kept strictly confidential and will not be exposed publicly. The results of the experiment may be published, but details of individual participants will not be reported.

Ethical concerns:

If you have any serious concerns about the ethical conduct of this study, please inform the Director of Psychology Programmes in writing, providing a detailed account of your concern. Your complaint should be addressed to School of Biological and Chemical Sciences, Queen Mary University of London, Mile End Road, E1 4NS London.

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Having lived in the four countries of Switzerland, Iran, Austria, and England, Reza Nasseri has faced the challenge of adapting to ten schools with different academic systems, languages, and philosophies along the way. These adaptations have helped him acquire a deep understanding and awareness of people and culture, the unique lens through which each individual perceives the world, and the importance of embracing, respecting, and nurturing that uniqueness. This allows him to interact with individuals both comfortably and professionally, and see the world through their eyes in order to establish trust.

After completion of his MSc in Mental Health Studies at King's College London, Reza is now studying Medicine at Bristol, pursuing a career in Psychiatry. He also has a long term dream of one day setting up an institution that offers easily accessible and top-quality psychiatric and psychotherapeutic support for children and adolescents in a dynamic, motivating, and stigma-free environment. Reza has also both researched and worked with people experiencing psychosis. He is a qualified level 3 personal trainer, and is also a trained phlebotomist. His personal interests include football, tennis, music, acting, reading, and drawing.