

Assessing Belief in the Paranormal: An Exploratory and Confirmatory Factor Analysis

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Abstract

Students often mention their paranormal beliefs in psychology courses. Being able to identify the dimensions of the paranormal could inform educators of specific concepts that need to be addressed in the classroom. A few paranormal belief inventories exist, but there is little agreement on whether all the factors identified in those inventories represent the domain of the paranormal. For this reason, there is a definite need for developing a focused measure that assesses paranormal beliefs. A group of 17 paranormal oriented questions were selected for an exploratory factor analysis. Fifteen of the items grouped into four distinct factors. We named the factors Omens of Luck, Mystical Experiences, Psychic Ability, and Spirits. The four factor model was confirmed by performing confirmatory factor analysis. We named the new questionnaire the Paranormal Assessment Scale (PAS). The PAS is discussed as a viable alternative to other inventories for assessing belief in the paranormal.

Keywords: paranormal, belief, superstition, psychic ability, factor analysis

Psychology educators are often faced with having to convey difficult concepts to students relating to the brain and behavior. This can be confounded when students interpret what they learn in their psychology courses within the context of paranormal beliefs they hold (Messer & Griggs, 1989; Taylor & Kowalski, 2004). Paranormal, in this context, refers to any phenomenon which has an explanation that lies outside the realm of mainstream science (Hines, 2003). Students can become dismissive of science when they discover that it casts doubt on most paranormal claims. One way of dealing with this problem is for educators to develop ways of helping psychology students distinguish science from pseudoscience (Lilienfeld, Lohr, & Morier, 2001). This can be a daunting task, however, when many college students have preconceptions about science and the paranormal (Sparks & Miller, 2001).

Belief in the paranormal is widespread in our culture. According to a 2005 Gallup Poll (Moore, 2005) which sampled 1,002 adults, three out of four people hold at least one paranormal belief and 22% believe in five or more paranormal items. Pew Research Center (2009) surveyed 2,003 adults and found that 49% claim to have had a religious mystical experience and 24% believe in reincarnation. Further, the survey found that 65% of respondents reported that they believe in at least one “diverse supernatural phenomena” such as spiritual energy, reincarnation, yoga as spiritual practice, belief in the “evil eye”, astrology, communicating with the dead, visiting a psychic, or encountering a ghost. A recent Harris Poll (2013) of 2,250 adults found that 64% believe in the survival of a soul after death, 42% believe in the existence of ghosts, 29% believe in astrology, and 24% believe they were once another person (that they were reincarnated). Since so many adults hold these kinds of paranormal beliefs, it is very likely that students will enter the classroom with these ideas in mind.

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Despite the fact that paranormal belief is so pervasive, there is little agreement about which factors best represent the domain of the paranormal (Dagnall, Parker, Munley, & Drinkwater, 2010; Lawrence, 1995; Lindeman & Aarnio, 2006). Belief in the paranormal is typically assessed by administering self-report questionnaires. The two most commonly used measures are the Revised Paranormal Belief Scale (R-PBS) and the Australian Sheep-Goat Scale (ASGS) (Goulding & Parker, 2001; Irwin, Dagnall, & Drinkwater, 2012).

Tobacyk's R-PBS (Tobacyk, 1988; Tobacyk & Milford, 1983) consists of 26 items on a 7-point scale that ranges from "Strongly agree" to "Strongly disagree." The scale has been used extensively and demonstrates high validity and reliability; two studies (Auton, Pope, & Seger, 2003; Tobacyk, 2004) reported high reliability ($\alpha = .93$ and $.92$, respectively). Seven subscales have been derived from the R-PBS through factor analysis: superstition (3 items), extraordinary life forms (3 items), witchcraft (4 items), spiritualism (4 items), psi (4 items), precognition (4 items), and traditional religious beliefs (4 items).

Thalbourne's ASGS (Thalbourne, 1995; Thalbourne & Delin, 1993) is comprised of 18 items that assess belief in parapsychological phenomena. Respondents indicate their level of agreement with each question on a visual analogue scale. The ASGS identifies three factors: extrasensory perception (ESP), psychokinesis (PK), and life after death. Sixteen of the items relate to ESP and PK and two ask about life after death. The intent of the ASGS is not to arrive at three separate factor scores but to attain a single measure of respondents' belief in psychic ability (Thalbourne, 1995; Wiseman & Watt, 2004). Storm and Thalbourne (2005) reported a high alpha coefficient of .91 for the ASGS.

As can be seen, there is variability in what each inventory considers being dimensions of the paranormal. The R-PBS identifies seven different factors while the ASGS identifies three, or perhaps just one. There does seem to be general agreement that superstition, spiritualism, psi, and precognition are "paranormal" but more questions exist about whether three of the factors identified by the R-PBS, extraordinary life forms, witchcraft, and traditional religious beliefs, actually represent dimensions of the paranormal.

The relationship between religious beliefs and paranormal beliefs is disputed. Some studies (Goode, 2000; Orenstein, 2002) have documented a positive correlation between paranormal beliefs and religious beliefs, while other studies (Bainbridge & Stark, 1980; Tobacyk & Wilkinson, 1990) have found a negative correlation between the two types of beliefs or that they are independent of each other (Donahue, 1993; MacDonald, 2000; Rice, 2003). It is curious that witchcraft was included as a separate factor. Witchcraft can have occult connotations but it is considered the practice of those who adhere to the Wiccan religion (Moe, Cates, & Sepulveda, 2013). As such, it is unclear if witchcraft should be a unique paranormal dimension or if it is more akin to the domain of religion.

The inclusion of extraordinary creatures as a factor in the R-PBS is also contentious. Dagnall et al. (2010) point out that it is unclear whether belief in creatures such as the Yeti, the Lochness monster, and extraterrestrials represents a paranormal dimension. Lawrence (1995) argued that the mystery surrounding these supposed creatures is their elusiveness, not that they possess any kind of paranormal characteristics. Because of the lack of agreement about some of the factors on the R-PBS, there is room to develop a more concentrated survey that identifies "core" paranormal dimensions.

Developing an alternate measure to the R-PBS and ASGS could provide additional insight into what the core dimensions of the paranormal truly are. Superstition is a factor represented on the PBS. Many superstitious beliefs involve luck. Some researchers divide the concept of luck into good luck and bad luck (Darke & Freedman, 1997; Day & Maltby, 2003; Wiseman & Watt, 2004). Things people do that could supposedly bring them good luck, such as performing various rituals, could be considered as representing "omens of good luck" while other things that seem to be harbingers of bad luck could be considered as representing "omens of bad luck" (Aarnio & Lindeman, 2005). The PBS does not include any items that measure belief in omens of good luck – all the superstition items concern "bad luck." Belief in good luck is important to investigate because it may be related to a naive kind of positivism while belief in bad luck may be related to pessimism and less personal control (Day & Maltby, 2003).

An important factor underlying paranormal belief is the experiences a person, their friends, or family members claim to have had with the paranormal (Gow, Hutchinson, & Chant, 2009). Many people who hold paranormal beliefs report that they had a personal unexplainable experience that seems to be undeniable evidence of the paranormal (Aarnio & Lindeman, 2005; Rattet & Bursik, 2001). Neither the R-PBS nor the ASGS has questions that ask about personal unexplained experiences. Including these kinds of questions could provide information about whether a person who endorses a particular paranormal belief has also had an unexplained mystical experience.

After examining current paranormal inventories and considering what areas best represent the dimensions of paranormal belief, we decided to develop a questionnaire that could be used to assess belief in the paranormal. Conceptual methods guided our item selection. A focused approach to item selection was taken. There is clear evidence that superstition is a dimension found on other paranormal questionnaires. We decided not only to include

items that ask about superstition but also to make sure that some items asked about good luck and bad luck. We also thought that items related to paranormal mental abilities, the existence of spirits and life after death should be included. We also made a point to include items that ask about personal unexplained experiences since belief in the paranormal is often associated with first-hand reports of paranormal experiences.

The items related to superstition and luck were based on items from the Superstition Scale developed by Leonard, Goldberger, Rapoport, Cheslow, and Swedo (1990) as well as the inventories reported by Tobacyk (1988) and Wiseman and Watt (2004). Paranormal items related to extraordinary mental abilities and spirits were developed after examining inventories by Tobacyk (1988) and Rice (2003). Items that asked whether respondents had ever had a personal unexplained mystical experience were based on those reported by Aarnio and Lindeman (2007). A total of 17 paranormal items were gathered together for testing. The wording of each item was different from any of the items on existent inventories. We hypothesized that applying a factor analytic approach to the items would reveal an underlying factor structure that could provide the basis of a new questionnaire for assessing paranormal beliefs.

STUDY 1

The purpose of Study 1 was to examine the underlying factor structure of the 17 survey questions by performing exploratory factor analysis (EFA). Internal reliability for the entire scale and the subscales was assessed along with interfactor correlations. Demographic differences between subscale scores were also examined along with item correlations.

Method

Participants

Data were obtained from a sample of 265 college students enrolled at a Southern university in the United States. The mean age was 33.6 years ($SD = 10.9$) with an age range of 20 to 67 years. The sample was primarily female (87.9%). Students from every academic class level were represented—the sample consisted of 3.8% freshmen, 13.2% sophomores, 34.0% juniors, 40.0% seniors, and 9.0% graduate students.

Measure

The measure used in this study consisted of 17 paranormal oriented items that were presented as an online questionnaire (see Appendix A). Respondents were asked to choose the option that best fits their belief on a 5-point Likert-type scale. Fourteen of the items asked about beliefs. The scale for these items ranged from 1 (*Definitely no*) to 5 (*Definitely yes*). Three items asked whether respondents had ever had a personal mystical experience, whether someone close to them had, or whether an acquaintance had. The scale for the personal experience item ranged from 1 (*Never*) to 5 (*Many times*) while the scale for the other two mystical experience items ranged from 1 (*No one*) to 5 (*Many people*).

Procedure

Students logged onto the survey website and read a description of the study. They provided their informed consent by clicking the “Next” button to begin the survey. Students could discontinue participation at any time without penalty. The IP addresses of the computers each student used to take the survey were not collected. Participants received extra course credit for their participation. Students printed out the last page of the survey that showed they completed the survey to receive credit. It took an average of less than 10 minutes for each participant to read the description of the study and to take the survey.

Data Analysis

Means and frequencies for each survey item were collected. EFA was performed using SPSS 19 software. The alpha factoring method for factor extraction was used with promax rotation, which included a relaxation factor of (k) = 4. Factor selection was based on the Eigenvalues greater than one criteria. Items were retained if they had factor loadings of .40 or greater. Any item that did not load on a factor or that had cross-loadings with other factors of .40 or greater was deleted from the model and another analysis was run. Cross-loaded items were deleted since leaving them in the model would make factor interpretation difficult. This iterative process was performed until there were no cross-loadings..

Results

Exploratory Factor Analysis

An initial alpha factoring EFA with promax rotation was run on the 17 items. Items 8 and 13 of the Original Item Pool (see Appendix A) did not load so they were deleted from the analysis and a second EFA was run. This time every item had loadings that exceeded the .40 threshold so none were dropped from the analysis. Next, the correlation matrix was examined to see if the items were suitable for factor analysis. The value of the determinant was .002, which indicates that multicollinearity was not present in the data. Bartlett’s test of sphericity was highly significant ($p < .0001$) so the correlation matrix was not an identity matrix. Lastly, the value of the

Kaiser-Meyer-Olkin measure was .85 which shows that the sample size was more than adequate to conduct factor analysis.

The second EFA run resulted in a four-factor solution based on the eigenvalues greater than 1 criterion. Inspection of the scree plot (see Figure 1) shows that a four-factor solution could be selected for these items. Total variance explained cannot be reported when oblique rotation is used. However, the percentage of total variance explained by each factor can be examined prior to rotation. The total variance accounted for by the four factors prior to rotation was 65.66% with specific contributions from each factor being 34.23% for Factor 1, 15.47% for Factor 2, 8.56% for Factor 3, and 7.40% for Factor 4. Based on item content, we decided to name the factors *Omens of Luck*, *Mystical Experience*, *Psychic Ability*, and *Spirits*. Internal reliability for the entire scale was high ($\alpha = .86$). Each of the subscale internal reliabilities exceeded the generally accepted threshold of .70 (Nunnally & Bernstein, 1994) except for the Spirits subscale, which was slightly lower than the threshold ($\alpha = .69$). See Table 1 for the factor loadings, descriptive statistics, alpha coefficients, and interfactor correlations.

Means and Percentages

Means and percentage of belief for each item are shown in Table 2. Some of the item responses were aggregated in the table for ease of display and interpretation. The “I think so” and “Definitely yes” responses were collapsed into a “Believe” category, and the “Definitely no” and “I don’t think so” responses were collapsed into a “Do Not Believe” category. An examination of the percentage of belief responses shows that a greater percentage of people endorsed belief in an eternal soul, ghosts, precognition, near death experiences and personal mystical experiences than other paranormal phenomena.

Fewer students reported belief in ESP (22.3%) compared to 41% reported by Gallup (Moore, 2005). Belief in reincarnation (17.4%) was lower than what Gallup (Moore, 2005) or the Harris Poll (2013) reported (20% and 24%, respectively). Fewer students reported having a mystical experience than what the Pew Research Center (2009) reported (34% vs. 49%). Nearly half of the student sample (46.4%) believed in the existence of ghosts compared to 37% reported by Gallup (Moore, 2005) and 42% by the Harris Poll (2013). More students believed that people could predict the future (37.4% vs. 26%) and communicate with the dead (27.2% vs. 21%) than reported by Gallup (Moore, 2005). Lastly, more students reported belief in an eternal soul than what the Harris Poll (2013) reported (70.9% vs. 64%).

Demographic Differences

Age and gender were examined to see if there were any differences by factor or full scale score. Age was treated as a continuous variable and was correlated with each factor score and the full scale. Bonferroni correction was used to account for cumulative Type I error. The only significant correlation showed that younger people endorsed belief in omens of luck more than older people in the study, $r(263) = -.16, p = .01$. Considering that the p value for this correlation is the exact level of significance needed after applying the Bonferroni correction, this finding should probably be interpreted with caution. Gender differences between the factors and the full scale were also examined. Table 3 shows the means and standard deviations for gender by factor and full scale score. Mann-Whitney tests were performed since gender was not normally distributed in the sample. Bonferroni corrections were applied to each of the five tests. None of the tests involving gender were significant.

STUDY 2

The primary objective of Study 2 was to use confirmatory factor analysis (CFA) to cross validate the hypothesized four-factor model from Study 1 with a second sample of respondents. CFA is a statistical procedure that provides an empirical standard for assessing the fit of a model.

Method

Participants and Procedure

A different sample of 265 college students from the same Southern university participated in the study. The mean age was 31.6 ($SD = 10.4$) with an age range of 18 to 65 years. Again, the sample was primarily female (78.1%). Students of different class levels participated. The sample consisted of 17.0% freshmen, 15.4% sophomores, 18.5% juniors, 38.5% seniors, and 10.6% graduate students. The same procedure was used as in the Study 1.

Data Analysis

CFA was performed using the maximum likelihood estimation method in LISREL 9.1 to test the goodness of fit from the model arrived at in Study 1. LISREL generates several goodness of fit measures. The chi-square for the model, also called the discrepancy function, is typically regarded as the most important goodness of fit measure. Non-significant chi-square tests indicate a good fit for the model. A rough guideline many researchers use to determine the sample size needed for factor analysis is to have a participant to item ratio of at least 10:1 (Everitt, 1975; Schwab, 1980). The ratio of participants to items in this study is nearly 18:1. Although a large sample size is

desirable, it can create a problem for evaluating a model. The chi-square test is more likely to be significant when sample size is greater than 200 (Hu & Bentler, 1995).

An alternative way to evaluate goodness of fit that is less sensitive to sample size is to report the ratio of chi-square to degrees of freedom (Hoelter, 1983), referred to as relative chi-square. Some researchers suggest that an acceptable value of relative chi-square should be less than 5 (Schumacker & Lomax, 2004) while others argue that the value should be less than 2 (Ullman, 2001). The discrepancy chi-square and relative chi-square will both be reported here for comparison.

Additional model fit statistics reported include incremental and residual indices. Incremental indices reported are the normed fit index (NFI), goodness of fit index (GFI), and comparative fit index (CFI). The residual indices reported are the root mean square error of approximation (RMSEA) and the standardized root mean square residual (SRMR). There are no strict guidelines for these measures but acceptable values for NFI and GFI are .90 or greater (Byrne, 1994), the value of CFI should be .93 or greater (Byrne, 1994), RMSEA should be .06 or less, and SRMR should be .08 or less (Hu and Bentler, 1999).

Results

The discrepancy chi-square was significant, $\chi^2(84, N = 265) = 161.39, p < .0001$. In light of the potential problems with the discrepancy function and sample size, relative chi-square was calculated. The value of relative chi-square ($\chi^2/df = 1.92$) was below Ullman's (2001) criteria of 2 indicating a good fitting model. Additional goodness of fit measures were evaluated. The values of NFI (.94) and GFI (.92) were both above the cut-off of greater than .90 showing a good fit. The value of CFI (.97) was above the suggested cut-off of greater than .93 also showing a good fit. The value of RMSEA (.06; $CI_{.95} = .045-.072$) was right at the cut-off point, and the value of SRMR (.05) was below the suggested cut-off of less than .08, indicating a good fitting model. Overall, the relative chi-square and other measures indicated that the four-factor model from Study 1 was a good fit to the Study 2 sample. The path diagram with standardized parameter estimates for the CFA is shown in Figure 2.

General Discussion

The four factor model identified in Study 1 was shown to be a plausible model. Fifteen items were able to tap four dimensions of paranormal belief: Omens of Luck, Mystical Experiences, Psychic Ability, and Spirits. Although other inventories have arrived at different factors, the four factors from this measure could be considered "core" dimensions of paranormal belief. Having fewer factors enables a more focused approach to investigating paranormal belief. The 15 items will henceforth be referred to as the Paranormal Assessment Scale (PAS). The PAS represents a new measure for assessing belief in the paranormal (see Appendix B).

The four factors identified by the PAS can inform us about the nature of paranormal belief. There are so many different beliefs that could be categorized as paranormal that having a focused list of four factors could be useful for tailoring class discussions. Educators could discuss the factors with students in a way that promotes the development of critical thinking skills. Students could be encouraged to use self-questioning, reflection, and group discussion to become aware of how their own thought processes contribute to belief in the paranormal.

The only demographic finding in the study was that younger people were more likely to endorse belief in omens of luck than older people. It is unclear what might account for this finding. Younger students might be more open to unconventional ideas and might also be more easily influenced (Torgler, 2007). The connection between youth and superstition (or belief in luck) has been supported in some studies but not in others (Vyse, 1997). This is another instance where demographic differences are mixed when it comes to studying the nature of paranormal belief.

There are four reasons the PAS should be considered as a possible alternative to the R-PBS for measuring paranormal beliefs. First, the PAS is a shorter alternative to the R-PBS. It can be used as a quick measure for assessing paranormal beliefs. Second, the PAS includes items that ask about omens of good luck. This differs from questionnaires that only ask questions about omens of bad luck, such as the R-PBS. A third reason to use the PAS is that it includes items that ask about personal mystical experiences. This is important for seeing whether a person who endorses various paranormal beliefs has also had an unexplained mystical experience. Fourth, identifying four core dimensions of the paranormal allows educators to specifically address issues related to those factors in the classroom.

The PAS does have some limitations. First, convergent validity has not been established. Future research with the PAS should assess convergent validity with the R-PBS and ASGS. This is a logical next step in the development of the PAS. Seeing how respondents score on the PAS compared to other measures could show that the PAS is not only conceptually a better alternative to other measures but that it is psychometrically a better alternative. Second, the alpha coefficient for the Spirits factor was marginally acceptable. Future studies could show if reliability improves with different samples of respondents. Additional items could also be tested to see if

they improve the reliability of the factor. Third, the findings may not entirely represent the degree of paranormal belief in the population. The high ratio of women to men in the study may not reflect actual gender differences in paranormal belief. The sample was drawn from a single university in the South, which could also limit the generalizability of the findings.

Conclusion

A particular strength of the PAS is that it identifies four primary dimensions of the paranormal. The factors identified by the PAS provide a simple straightforward measure for assessing paranormal beliefs. Continuing investigation could use the PAS along with other surveys that measure personality traits and level of cognitive development to identify characteristics associated with paranormal belief. This line of inquiry could provide insight into how belief in the paranormal is but one aspect of a person's belief system and how it influences a person's approach to critically analyzing new information.

The two studies reported here provide the basis for a possible new questionnaire that assesses belief in the paranormal. Based on the results, the four paranormal dimensions identified by the PAS are *Omens of Luck*, *Mystical Experiences*, *Psychic Ability*, and *Spirits*. Four factors are fewer than what the R-PBS has arrived at but more than what the ASGS identified. It is important that data drive the development of paranormal belief questionnaires instead of relying on pre-existing ideas that may not be accurate or well understood. This is a difficult task since conceptual ideas need to inform how we investigate paranormal belief since there is little concrete theory about what the dimensions of the paranormal truly are. The 15 items identified here may represent a new brief measure for identifying and assessing the core dimensions of paranormal belief. Future investigation with different samples should better inform us of the validity and reliability of the PAS.

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Table 1.
Study 1. Exploratory Factor Analysis with Promax Rotation
Factor Loadings, Descriptive Statistics, and Interfactor Correlations

Factors and Items	Full Scale	Factor Loadings			
		1	2	3	4
Factor 1: Omens of luck					
Number 13		0.86	0.00	-0.22	-0.01
Black cats		0.73	0.04	0.08	-0.21
Charms		0.71	-0.09	0.02	0.12
Rituals		0.58	0.05	-0.17	-0.11
Factor 2: Mystical experiences					
Close		0.08	0.98	-0.10	-0.04
Acquaintance		-0.07	0.86	0.04	-0.01
Personal		-0.02	0.71	0.12	0.08
Factor 3: Psychic ability					
ESP		-0.07	0.02	0.85	-0.12
Telekinesis		-0.05	-0.01	0.69	0.01
Reincarnation		0.28	-0.01	0.48	0.00
Precognition		0.06	0.03	0.44	0.31
Factor 4: Spirits					
Near death		0.04	0.18	-0.10	0.70
Soul		-0.27	-0.02	-0.03	0.63
Ghosts		0.15	-0.08	-0.04	0.61
Communicate		0.13	-0.06	0.23	0.46
Mean	2.63	2.07	2.89	2.39	3.25
Standard deviation	0.69	0.88	1.13	0.89	0.92
Skewness	0.10	0.59	0.06	0.41	-0.34
Kurtosis	-0.02	-0.26	-0.52	-0.26	-0.26
Chronbach's Alpha	0.87	0.79	0.89	0.77	0.69
Interfactor Correlations					
Full Scale	1.00	.71	.59	.82	.79
Omens of luck (4-items)		1.00	.12	.55	.40
Mystical experience (3-items)			1.00	.31	.34
Psychic ability (4-items)				1.00	.54
Spirits (4-items)					1.00

Table 2

Study 1: Means, Standard Deviations, and Percentage of Belief for Each Item (N = 265)

Item	<i>M</i>	<i>SD</i>	Believe (%)	Not Sure (%)	Do Not Believe (%)
ESP	2.50	1.17	22.3	27.2	50.6
Telekinesis	1.82	1.00	7.5	12.5	80.0
Black cats	1.85	1.14	13.2	9.80	77.0
Reincarnation	2.29	1.23	17.4	24.9	57.7
Eternal soul	3.94	1.30	70.9	13.2	15.8
Precognition	2.97	1.24	37.4	27.5	35.1
Rituals	2.43	1.23	23.4	20.8	55.8
Ghosts	3.14	1.38	46.4	20.0	33.6
Number 13	1.82	0.99	5.7	16.2	78.1
Communicate	2.74	1.24	27.2	31.3	41.5
Charms	2.18	1.12	14.7	20.8	64.5
Near death	3.16	1.17	41.1	32.5	26.4
			0 to 1 time (%)	A few times (%)	Many times (%)
Personal	2.91	1.36	34.0	30.2	35.8
			No one or one person (%)	A few people (%)	Many people (%)
Close	2.95	1.18	27.9	44.9	27.2
Acquaintance	1.19	1.19	23.0	46.0	30.9

Note. Some percentages may not add up to 100 due to rounding.

Table 3

Study 1: Means and Standard Deviations for Gender by Factor and Full Scale Score (N = 265)

Characteristic	<i>n</i>	Full Scale		Omens of Luck		Mystical Experiences		Psychic Ability		Spirits	
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Gender											
Male	32	2.43	0.74	1.73	0.80	2.98	1.27	2.19	0.98	2.98	1.04
Female	233	2.66	0.68	2.12	0.88	2.88	1.11	2.42	0.88	3.28	0.90

Figure 1. Study 1: Scree plot for the 15 paranormal items. Inspection of the scree plot indicated a four-factor solution.

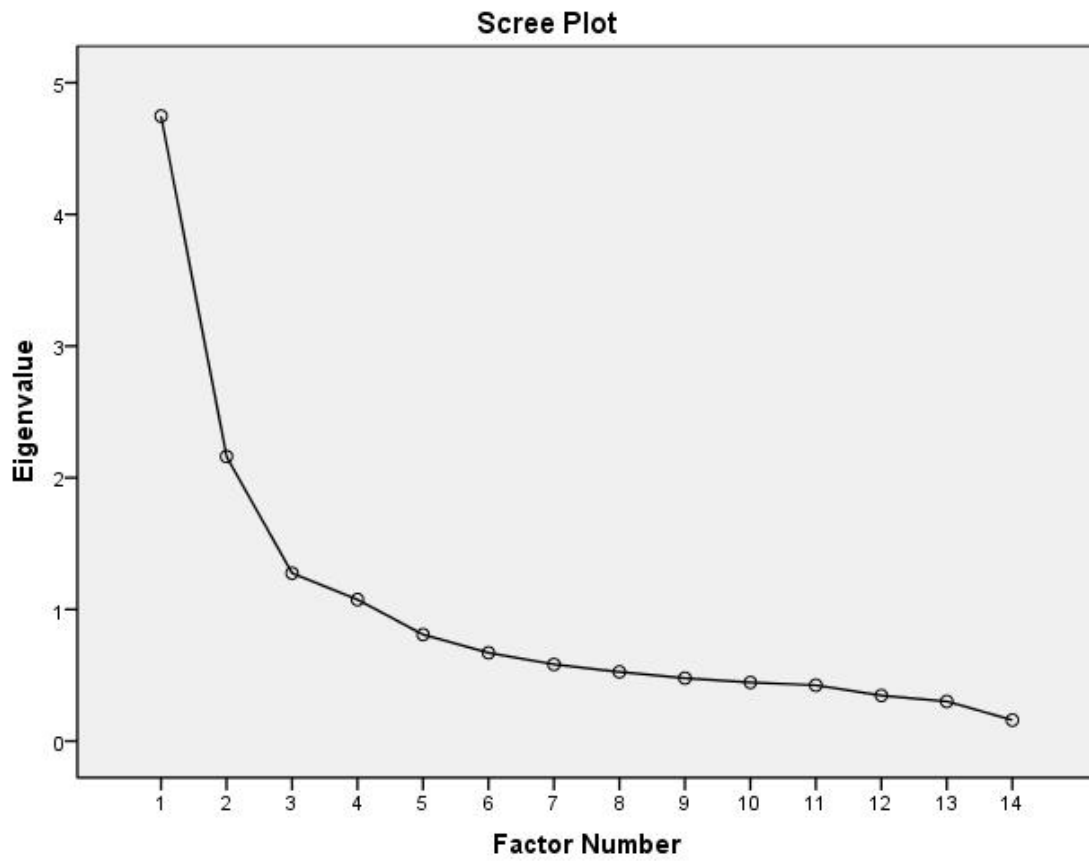


Figure 2. Study 2: Results of the confirmatory factor analysis showing standardized parameter estimates. Ellipses represent factors and rectangles represent indicators (i.e., items). Lines with one arrow connect factors and indicators, expressed as regression coefficients. Lines with two arrows indicate relationships between factors, expressed as covariances. Numbers in the far left-hand column are residuals, expressed as covariances.

