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Some Determinants of Belief in Psychical Phenomena¹

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ABSTRACT: A number of variables were tested for possible relationships with belief in psychical phenomena in three samples of college students ($N = 75, 180, 195$) and a representative sample of adults ($N = 568$) in Iceland. None of the obtained correlations were high, but a significant correlation was found with belief in life after death, and significant correlations with all the religious items included across the four studies. Interpreting one's dreams was also a significant correlate. Dream recall and sex showed a significant relationship in two samples out of three in which these variables were included. Not related to belief in psychical phenomena were educational level and age, political orientation, and results on Rotter's Internal-External Locus of Control Scale and the Defense Mechanism Test.

Some tentative interpretations are offered of the major finding of these studies: that there is a moderate but apparently stable association between belief in psychical phenomena and belief in religion (in a broad, non-sectarian sense).

INTRODUCTION

This paper reports some further attempts to investigate the psychological dimensions which distinguish believers in psychical phenomena from disbelievers—that is, those groups of people who have become known in parapsychology as “sheep” and “goats” respectively (Schmeidler and McConnell, 1958). In a previous collaborative paper, Thalbourne and Haraldsson (1980) described a group of four studies in which, independently of one another, they

¹ A preliminary version of this paper (under a different title) was presented by Dr. Haraldsson at the Twenty-Third Annual Convention of the Parapsychological Association, Reykjavik, Iceland, August, 1980. Ed.

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had searched for relationships between belief in psychical phenomena as measured by two "sheep-goat" scales and personality variables as measured by standard psychological questionnaires. In the two experiments (a pilot and a confirmation) I conducted in this group of studies, I made use of the Cattell Sixteen Personality Factor (16PF) Questionnaire (Cattell, Eber, and Tatsuoka, 1970) and found in both of them that Factors A (reserved versus outgoing) and Q₁ (conservative versus experimenting) on the 16PF were related to the sheep-goat variable to a small but significant degree. This indicated that believers were more outgoing and conservative than disbelievers, who tended to be more reserved and radical-thinking.

Though some significant differences have been found, the search for personality correlates of belief in psi has yielded relatively meager results. In our collaborative paper we conceded that the magnitude of the effects we had found was by no means large: "The sheep-goat variable typically was related to a mere 7% of the variance in the personality measures. This is part of the reason why, in both studies, prediction of sheep-goat status in a new sample proved relatively unsuccessful: personality is not a very strong predictor of whether a person is a sheep or a goat". (Thalbourne and Haraldsson, 1980, pp. 184-185).

The four studies to be described in this paper are not concerned with personality traits as such. Rather, for the most part they explored how belief in psychical phenomena may be related to attitudes, experiences, and activities in the domain of religion and politics. For this purpose, I turned back to old data I had originally collected for other reasons. These studies all used comparable scales to measure the degree of belief versus disbelief in psi.

THE SHEEP-GOAT SCALE

Scalar instruments as well as single questions have been used to measure the degree of belief in psychical phenomena. Such scales have varied considerably in the number and content of the items included (see Palmer, 1971, 1972). The scale that was used in the four studies reported below was formed from the responses to three multiple-choice questions. Two of them concerned the subject's belief in the existence of different forms of ESP, and one concerned an activity indicative of a general interest in psychical phenomena:

- (a) Do you believe that the existence of telepathy (thought-transference) or clairvoyance is (1) unthinkable, (2) unlikely, (3) likely, (4) certain?

- (b) Do you believe that the ability to know the future or to have dreams about it is (1) unthinkable, (2) unlikely, (3) likely, (4) certain?
- (c) Do you read books or articles on psychic phenomena (1) never, (2) seldom, (3) now and then, (4) often?

A score on this Sheep-Goat Scale was obtained for each individual by summing up the point-scores opposite each response. Subjects who did not respond to all three items were excluded from further analysis. This scale (theoretical range being 3-12) was used in all four studies, except that in Study I the possible responses to the items differed slightly in a way described below.

The corrected item-total correlations are very stable from sample to sample. For "Reading about Psychic Phenomena" it is approximately +.52; for "Belief in Telepathy or Clairvoyance," +.67; and for "Belief in Precognition," +.61. No data are available concerning the test-retest reliability of this scale, but the alpha reliability coefficient is approximately .76. It may also be of interest to point out that in an earlier study with 449 subjects these questions were predictive of precognition scoring (Haraldsson, 1980).

STUDY I

In a national survey of psychical experiences conducted in Iceland during 1974-75, data were also collected on such items as religiosity, religious experiences, and dream recall in addition to sheep-goat attitudes (Haraldsson, Gudmundsdottir, Ragnarsson, Loftsson, and Jonsson, 1977). The sample consisted of persons between 30 and 70 years of age, selected at random from the National Registry, and thus highly representative of the Icelandic population in that age range. In this extensive survey approximately 900 persons, or 80% of the original sample size, returned usable questionnaires regarding their psychical experiences.

The basic Sheep-Goat Scale, as described above, was included in the survey questionnaire, but the two "Belief" questions in the scale had six rather than four possible responses, the additional categories being "possible" (between "unlikely" and "likely") and "don't know."³ Also, the item concerning "Reading" lacked the category "now and then" and thus "often" was scored three points rather than four. Therefore, in this study only the values of the Sheep-Goat scale ranged from 3 to 13, the empirical mean was 9.53, and the standard deviation 1.83.

³ Those indicating "don't know" were excluded from further analysis, leaving a total of 568 respondents (257 males; 281 females; 30, no information) who replied to all three items on the scale.

Results

The national survey questionnaire⁴ contained four of the items relevant to religion (see Appendix A for a list of all questions correlated with the Sheep-Goat Scale in one or another of the four studies). The first (Item 2 in the list) was: "How religious do you consider yourself to be?" Surveys have shown that religiosity in the Icelandic population is comparable to that in the United States, but greater than in other Nordic countries or in Great Britain (Haraldsson, 1978a; Seligman, 1977). Self-reported religiosity showed a significant rank-order correlation of $+0.26$ ($N = 539$) with the Sheep-Goat Scale.

The second question (Item 9) pertaining to religion asked: "Have you ever had a vivid religious or spiritual experience?" Such an experience was reported by 25% of the respondents, a figure which compares reasonably well with recent surveys in the United States and in Great Britain (Greeley, 1974; Hay and Morisy, 1978). Having had a religious or spiritual experience was also related positively to belief in psychical phenomena ($r = +0.25$, $N = 511$).⁵

The third question (Item 10) concerned Bible-reading and the fourth question (Item 11) reading about Eastern religions and related topics. There was a very slight positive correlation with Bible-reading ($r_s = +0.09$, $N = 556$), but a significant one with the question on reading about Eastern religions ($r_s = +0.32$, $N = 545$). This may indicate that belief in psychical phenomena is related more to liberal or general religious interests than to orthodox or sectarian Christian beliefs.

Belief in psychical phenomena also showed a slight positive correlation ($r_s = +0.12$, $N = 557$) with reported frequency of dream recall (Item 13); a somewhat stronger correlation ($r = +0.30$, $N = 540$) was found with attempts to interpret one's dreams (Item 14). The largest correlation ($r_s = +0.42$, $N = 549$) was found with belief in life after death (Item 15).

While neither age nor educational level correlated significantly with the Sheep-Goat Scale, the respondents' sex did ($r = +0.22$, N

⁴ Because of a printing error in the text of the questionnaire which was not discovered until after it had been mailed to a sizable part of the sample, approximately 30% of the respondents did not answer a few of the questions.

⁵ Biserial correlation is a more appropriate test than Pearsonian correlation to handle the relationship between a continuous variable (such as degree of belief in psychical phenomena) and a dichotomous variable (such as having or not having a religious experience). However, as the computer programs of the SPSS (Statistical Package for the Social Sciences) used for these evaluations do not contain the biserial correlation test, it was decided to use the less appropriate Pearsonian correlation since the coefficients of these tests are practically identical when the number of subjects is as large as it is in the present sample.

= 568), with women believing in the reality of the psychic to a slightly greater degree than did men. (Questions regarding politics were not used in this study.)

STUDY II

The second sample consisted of 75 male students at the University of Iceland. They had previously participated in one or the other of two studies conducted to test a possible relationship between ESP scoring level and scores on the Defense Mechanism Test (DMT) (Haraldsson, 1978b; Haraldsson and Johnson, 1979). A questionnaire had been administered to these subjects containing 15 items (including those which comprise the Sheep-Goat Scale) concerned with religion, dream recall, survival, and politics. The Sheep-Goat Scale had a range of 3 to 12, a mean of 8.04, and a standard deviation of 2.04.

Results

Again, it was found that the highest correlation with the Sheep-Goat Scale was belief in survival ($r_s = +.52$).⁶ Four items pertaining to religion had a significant correlation with belief in psychical phenomena: self-reported religiosity (Item 2) ranked highest ($r_s = +.49$), followed closely by praying (Item 3), which showed a correlation of $+0.42$. Considerably behind were Item 4, "attending religious gatherings" ($r_s = +.27$), and Item 1, "reading books or articles about religious matters" ($r_s = +.26$). A composite "Religious Scale," made up of only the three religious questions (Items 1, 2, and 3) used in this study (range of 3 to 12, mean 5.83, and standard deviation 2.33) and in Studies III and IV, yielded here a highly significant correlation of $+0.46$.

Two questions dealing with dream recall, "do you remember having dreamed last night?" (Item 12) and "how often do you generally remember your dreams?" (Item 13), did not correlate significantly with the Sheep-Goat Scale. However, there was again a significant relationship ($r_s = +.33$) with attempts to interpret one's dreams (Item 14). No significant correlations were found with any of the political questions (Items 16-21). A nonsignificant correlation ($r = +.15$) was found between the Sheep-Goat Scale and the DMT, with sheep obtaining scores indicating slightly less psychological defensiveness than goats.

⁶ The number of subjects was 75 for all relationships tested in this study.

STUDY III

The third sample comprised 180 students at the University of Iceland (124 males, 56 females), most of them in their early twenties. The sample was formed by taking whole classes of students selected from various faculties, and is probably fairly representative of Icelandic university students. In 1978, these students responded to a questionnaire dealing with religion, dream recall, politics, and the Sheep-Goat Scale (range of 3 to 12, mean 7.80, and standard deviation 2.00).

Results

Again, significant relationships were found between the Sheep-Goat Scale and all three of the religious items included in this study: self-reported religiosity ($r_s = +.35$, $N = 180$), reading about religious matters ($r_s = +.39$, $N = 180$), and praying ($r_s = +.30$, $N = 180$). The three-item Religious Scale (the same scale that was used in Study II) showed a highly significant correlation of $+0.43$ ($N = 179$), with a range of 3 to 12, mean 6.02, and standard deviation 2.30.

The significant positive relationship between belief in the psychic and dream recall found in Study I was replicated. Frequency of dream recall showed a significant correlation of $+0.23$ ($N = 179$) and recollection of last night's dreams a significant correlation of $+0.22$ ($N = 180$). (The questions about dream interpretation and about survival were not asked in this study.)

None of the political items correlated significantly with the Sheep-Goat Scale, though Item 21 approached significance ($r = +0.14$, $N = 166$), indicating that sheep tended to favor private enterprise more than goats did, who were inclined to prefer state or cooperative enterprise. A scale composed of four questions (Items 16-19) measuring interest and participation in politics revealed a nonsignificant negative correlation with belief in psychical phenomena ($r_s = -.11$, $N = 179$). In this sample, sex correlated positively but not significantly with the Sheep-Goat Scale ($r = +0.12$, $N = 180$).

STUDY IV

The fourth sample consisted of 195 students at the University of Iceland (128 males; 65 females; 2, no information) who answered all items on the Sheep-Goat Scale; their characteristics were very similar to those in the third sample. Early in 1979, a questionnaire was administered to these students, who were in classes from

various faculties (science, engineering, economics, arts, and social sciences). The questionnaire consisted of 14 items relating to religion, survival, and politics, as well as the Sheep-Goat Scale (range of 3 to 12, mean of 7.54, and standard deviation of 2.06) and an Icelandic version of Rotter's Internal-External Locus of Control Scale (Robinson and Shaver, 1973). The present study was the only one in which subjects were not asked to give their names.

Results

The highest sheep-goat correlation was again found to be with belief in survival ($r_s = +.63$, $N = 195$). As shown in Table 1, all the items dealing with religion (in the present study, eight) correlated positively and significantly with the Sheep-Goat Scale: coefficients ranged from $+.35$ for "thinking about religious matters" (Item 5) to $+.55$ for "self-reported religiosity" (Item 2) and "belief in God" (Item 8). The same three-item Religious Scale used in Studies II and III was also used in this study (range of 3 to 12, mean 5.53, and standard deviation 2.05). It yielded a highly significant correlation of $+.60$ for the 193 subjects who answered all items in both scales. A larger Religious Scale (range of 8 to 12, mean 10.67, and standard deviation 6.16) composed of all eight items pertaining to religion gave a correlation of $+.64$ ($N = 152$).

Again, no significant correlations were found with any of the six questions dealing with politics. A scale composed of these questions gave only a slight and negative correlation with the Sheep-Goat Scale ($r = -.10$). Nor was there a significant correlation with Rotter's Internal-External Locus of Control Scale ($r = +.07$).

In this sample, sex correlated significantly with the Sheep-Goat

Table 1
SPEARMAN CORRELATIONS BETWEEN THE SHEEP-GOAT SCALE AND THE EIGHT
RELIGIOUS VARIABLES EXAMINED IN STUDY IV

N^a	Variable	Correlation
195	Thinking about religion	.35
194	Having felt the presence of God	.36
195	Reading articles or books on religion	.44
195	Attending religious gatherings	.45
194	Having experienced divine guidance or consolation	.51
195	Praying	.54
193	Self-reported religiosity	.55
195	Belief in God	.55

Note: All correlations are significant ($p < .001$, two-tailed).

^a N refers to the number of subjects who filled out all three items on the Sheep-Goat Scale.

Scale ($r = +.30$, $N = 195$), with women again averaging higher on the scale than did men. (Questions on dream recall and interpretation were not included in this study.)

DISCUSSION

In four studies with large numbers of subjects, certain significant correlates were found of belief in psychical phenomena as measured by the Sheep-Goat Scale. These correlates can be seen in Table 2.

Particularly striking, though perhaps hardly surprising, is the strong positive relationship between belief in survival and the Sheep-Goat Scale, with correlations ranging from $+0.42$ to $+0.63$. Michael Thalbourne (personal communication; see also Thalbourne, 1981) recently administered the Sheep-Goat Scale to a group of 161 students at the University of Edinburgh and found a small but significant correlation ($r_s = +0.23$, $p < .003$) with belief in survival (as measured on another sheep-goat scale). Thus this effect appears to be replicable.

Also striking is the strong positive relationship with all the religious parameters examined (except for Bible-reading). Correlations with self-reported religiosity ranged from $+0.26$ to $+0.55$, with praying from $+0.30$ to $+0.54$, and with reading on religious matters from $+0.24$ to $+0.44$. However, this latter correlation may be suspect: since the Sheep-Goat Scale itself contains a question about reading habits, the correlation may be due to a general tendency to read books; indeed, in Study III, the correlation between reading about

Table 2
CORRELATION COEFFICIENTS BETWEEN THE SHEEP-GOAT SCALE AND
EIGHT SELECTED VARIABLES, ALL FOUR STUDIES

Study	N^a	Religiosity	Praying	Reading on religion	Religious scale	Belief in survival	Dream recall	Dream interpretation	Sex
Study I	($N/568$)	.26	—	.24	—	.42	.12	.30	.22
Study II	($N/75$)	.49	.42	.26	.46	.52	.10*	.33	—
Study III	($N/180$)	.35	.30	.39	.43	—	.23	—	.12*
Study IV	($N/195$)	.55	.54	.44	.60	.63	—	—	.30

Note: All but two of the correlations (indicated by an asterisk) are significant ($p < .01$, two-tailed). Correlations with the Religious Scale and with sex are Pearson; all others are Spearman.

^a N refers to the number of subjects who filled out all three items on the Sheep-Goat Scale.

psychic phenomena and reading about religion was significant ($r_s = +.46$). Be this as it may, the composite Religious Scale made up of the three religious variables mentioned above correlated positively with the Sheep-Goat Scale from .43 to .60, indicating that from 18% to 37% of the variance of the two scales had a common source. Though about two-thirds of the variance still remains to be explained, belief in the psychic and religious beliefs have common factors to some extent.

It must be emphasized that the religious variables used in the questionnaire were limited in scope: for example, there were no items exploring religious orthodoxy or religious affiliation. There is one finding, however, indicating that what may have been measured by the particular items used was a liberal kind of religious approach rather than a sectarian or dogmatic one. Bible-reading correlated only very slightly with the Sheep-Goat Scale, whereas reading about Eastern religions and related subjects (which are quite foreign to the official Lutheran Protestantism in Iceland⁷ and which have at times caused some annoyance on the part of the clergy) correlated rather highly with belief in the psychic. This seems to be in line with a finding by Sheils and Berg (1977) that sheep score lower on measures of religious orthodoxy than do goats. It may be added that Shells and Berg found no sheep-goat relationship with church attendance in the United States, stating that they found this activity a "grossly inadequate indicator of religiosity" (p. 27). This also appears to be true for the Icelandic population.

In all three studies in which there were both male and female subjects, women scored higher on the Sheep-Goat Scale than did men, significantly so in Studies I and IV. The correlations were small, however, ranging from +.12 to +.30. Such weak but (for large samples) significant sex differences with regard to belief in the psychic have been found in several other countries—in the United States (Roper, 1974), Germany (Noelle-Neumann, 1965), and Sweden (IMU, 1978)—though there have been exceptions in smaller samples of American college students (Murphy and Lester, 1976; Sheils and Berg, 1977). Thalbourne (1981) confirmed the Icelandic sex difference finding in his sample of 161 British students who responded to the sheep-goat scale reported here; however, there was no sex difference when a 10-item scale (the Australian Sheep-Goat Scale) was used.

Dream recall, which has been associated with attention to inner

⁷ There is an official state-supported Lutheran Church in Iceland of which approximately 93% of the adult population are nominally members. However, the incidence of actual church attendance is very low.

processes, is another variable which was found, in two of the three studies in which this variable was included, to be slightly but significantly related to belief in psychical phenomena. A somewhat stronger relationship was found with the dream interpretation variable ($r_s = +.30$ and $+.33$, respectively). Dream recall and dream interpretation may perhaps be looked upon as measures of attention to purely subjective experiences and as efforts to search for their meaning.

In this connection it is of interest to note that some sociologists of religion, particularly Berger (1969) and Luckman (1967), interpret religion as a personal search for meaning—as an effort to structure reality into a meaningful universe or to build a system of meaning. The labeling of an experience as “psychic” is frequently dependent upon an individual’s assessment of events as being meaningfully connected rather than pure coincidence. On this basis, one may wonder whether a varying tendency in individuals to see or judge events as causally related or life in general as meaningful is the common source of the small but significant relationships found between religion (in a broad sense) and belief in psychical phenomena.

The findings are certainly open to other interpretations, depending on the various approaches to religion. Accepting the atheistic approach that religion is basically a superstition, it can be argued that belief in the paranormal is at least to some extent of the same nature. On the other hand, if we accept a much more positive approach to religion, we can argue that the findings indicate a general tendency to either believe or disbelieve in nonphysical realities. Be this as it may, it now seems fairly certain that belief in psychical phenomena and belief in religion in a wide sense are related to a degree we previously were not aware of.

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APPENDIX A

The following list contains all the items which were correlated with the Sheep-Goat Scale in the four studies. The actual questionnaires used in these studies varied in length because not every item was used in any given study; nor was the order in which the items appeared in the questionnaires necessarily the same as the order shown here.

1. Do you read articles or books about religious matters?
(1) never, (2) seldom, (3) now and then, (4) often
2. How religious do you consider yourself to be?
(1) not at all, (2) slightly, (3) fairly, (4) very
3. Do you pray?
(1) never, (2) seldom, (3) now and then, (4) often
4. Do you attend religious gatherings?
(1) never, (2) seldom, (3) now and then, (4) often
5. Do you sometimes think about religious matters?
(1) no, (2) yes
6. Have you ever felt in some way the presence of God or a higher power?
(1) no, (2) yes, perhaps, (3) yes, definitely
7. Have you ever experienced divine guidance or consolation?
(1) no, (2) yes, perhaps, (3) yes, definitely
8. Which of the following statements best describes the extent to which you believe in God?
(1) I do not believe in any God
(2) I believe in a God, but not necessarily the God of Christianity
(3) I believe in the God of Christianity
(4) I do not know what I believe in
9. Have you ever had a vivid religious or spiritual experience?
(1) no, (2) yes
10. How often do you read the Bible?
(1) often, (2) seldom, (3) never
11. Do you read books on Eastern religions or theosophy?
(1) often, (2) seldom, (3) never
12. Do you remember having dreamed last night?
(1) I do not remember any dreams
(2) I vaguely remember part of a dream
(3) I clearly remember part of a dream

- (4) I remember an entire dream

- 13. How often do you generally remember your dreams
 - (1) almost never
 - (2) at least once a month
 - (3) at least once a week
 - (4) almost every night
- 14. Do you attempt to interpret or understand your dreams?
 - (1) yes, (2) no [Study 1 only]
 - (1) never, (2) seldom, (3) now and then, (4) often
- 15. Do you consider life after death to be
 - (1) unthinkable, (2) unlikely, (3) likely, (4) certain?
- 16. Do you participate in any political organization?
 - (1) I dislike any organized political activities
 - (2) I do not participate in any political organizations
 - (3) I am an inactive participant in a political organization
 - (4) I am an active participant in a political organization
- 17. Did you vote in the last student election?
 - (1) yes, (2) no
- 18. Do you read newspaper editorials?
 - (1) often, (2) sometimes, (3) never
- 19. Do you discuss politics with your friends?
 - (1) often, (2) sometimes, (3) never
- 20. Do you follow political discussions on radio and television?
 - (1) never, (2) sometimes, (3) whenever I can
- 21. Which of the following alternatives do you consider to be best for the nation?
 - (1) increased private enterprise
 - (2) increased state and cooperative enterprise