

University Course Reduces Belief in Paranormal

A three-year study with control surveys and one-year followup finds a decline in paranormal belief

Thomas Gray

THE HIGH LEVELS of belief in various paranormal phenomena reported in this paper will not surprise readers of the *SKEPTICAL INQUIRER*.

The results of this study will be presented in detail elsewhere, but a brief summary of the main findings will, I hope, be of interest because of the scarcity of data bearing on the effectiveness of academic interventions that attempt to bring about reductions in belief in the paranormal. Jerome J. Tobacyk's brief article in this journal (*SI*, Fall 1983) might only have whetted readers' appetites for more information about the reliability and durability of such changes.

A one-semester course was given under the heading "The Science and Pseudoscience of Paranormal Phenomena" in the Psychology Department of Concordia University—a large, English-speaking university in Montreal.

The 13-week lecture-format course was offered in the January semester in 1981, 1982, and 1983. The lectures dealt with basic, practical issues in methodology with particular emphasis on how to collect "good" versus "bad" evidence. Many paranormal topics were dealt with to exemplify the characteristics of reliable versus untrustworthy evidence, and students were alerted to alternative explanations for the claims of the paranormal. More time was spent dealing with claims for ESP and UFOs than other topics. In 1981 the lectures were supplemented with C. E. M. Hansel's *ESP and Parapsychology: A Critical Re-evaluation* (Prometheus Books, 1980), and in 1982 and 1983 with James Alcock's *Parapsychology: Science or Magic?* (Pergamon, 1981). The general-interest nature of the course and its introductory level attracted students from diverse backgrounds.

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A simple questionnaire device was used to assess the students' willingness to express belief in ten paranormal phenomena. They were assessed BEFORE and AFTER the course and, for the 1981 and 1982 samples, a followup (FOLLOW) survey was conducted one year later. The ten phenomena were listed on the left of a single sheet. To the right of each phenomenon were five boxes. Students were told to check the first box if they did *not* believe in the phenomenon. This first column of boxes was headed with the label "No." The next four columns represented four strengths of a "Yes" response. The strength of a "Yes" response was measured from 1 (weak) to 4 (strong). These numbers were used as ordinal scores.

The ten phenomena surveyed were: extrasensory perception (including telepathy, clairvoyance, and psychokinesis); extraterrestrial spacecraft (UFO); astrology (ASTR); ghosts (GHO); Bermuda Triangle (TRI); Von Däniken's theories (VOND); psychic healing/surgery (HEAL); miracles (MIRA) biorhythms (BIO); and reincarnation/life after death (REIN). Brief descriptions of each were given and it was made clear that I wanted to know if they believed in the phenomena, not whether they thought they were theoretically possible.

Filling out the forms was voluntary (one student declined). In the 1981 sample the BEFORE and AFTER forms were anonymous, but students identified their own questionnaire with a number. The students were assured of confidentiality, and for the 1982 and 1983 samples I asked them if they would not mind putting their names on the various forms to facilitate collation.

To control for changes over time, and to make sure that the course was not attracting students with unusually high levels of belief, students in two other university courses were surveyed in 1982.

There were approximately 30 students in each of the three classes, and there were 35 students in the control group. A fact of life in the Faculty of Arts and Science at Concordia is a 2 to 1 ratio of females to males. Overall the subjects surveyed here reflected that ratio almost exactly (68% female and 32% male). A separate analysis took gender into account.

The FOLLOW surveys were successful in contacting 27 of 32 students in 1981, and 29 of 32 in 1982. No followup has been done for the 1983 sample, and no followup was conducted in the case of the control group.

The percentage of those students saying "Yes" to each of the phenomena and the mean strength of those "Yes" responses were recorded. The FOLLOW survey was conducted by telephone approximately one year after the end of the course. In 1981 I conducted the survey, but the FOLLOW survey for the 1982 course was conducted by a research assistant. This same assistant collected the AFTER survey for the 1983 sample.

Table 1 shows the percentage of students saying "Yes" to each of the phenomena in the various surveys. The results here are for the three years combined.

TABLE 1

Percent saying "Yes" (1981, 1982, and 1983 combined)

	ESP	UFO	ASTR	GHO	TRI	VOND	HEAL	MIRA	BIO	REIN
BEFORE	85	69	55	43	55	46	49	43	46	69
AFTER	54	51	43	34	25	23	35	46	40	55
FOLLOW	68	46	61	45	39	39	43	54	46	57
	*	*			*	*	*		*	

* Indicates that the change from BEFORE to AFTER was significant ($p < .05$) with the McNemar test for significance of change. Because the McNemar test deals with only those subjects who do change, absolute amount of change must always be noted when employing this test.

The general trend is for a decrease from BEFORE to AFTER with an increase back to an intermediary position. A notable exception is that no overall decrease in the students' willingness to endorse a belief in miracles (MIRA) was affected.

The pattern of change was similar for the samples from individual years. The best year for change was 1982, when a significant decrease in belief occurred for all ten phenomena. In 1981 6 of 10 BEFORE to AFTER changes were significant and, in 1983, 5 of 10 were significant at the .05 level. The significant changes just reported could be seen in terms of decreases in the mean strength of the "Yes" response and were assessed with the Sign test. Table 2 shows, as an example, the mean strength of the "Yes" response for the 1982 samples. It should be recalled that these mean strength scores are calculated for those respondents who said "Yes" on the BEFORE survey.

TABLE 2

Mean strength of "Yes" responses for 1982 course survey

	ESP	UFO	ASTR	GHO	TRI	VOND	HEAL	MIRA	BIO	REIN
BEFORE	2.34	2.09	2.28	2.32	1.59	1.61	1.75	2.00	1.81	2.23
AFTER	0.83*	0.68*	1.11*	0.63*	0.12*	0.39*	0.75*	1.20*	1.00*	1.31*
FOLLOW	1.46*	1.43*	1.94*	1.59†	0.75*	1.06†	1.36*	1.77	1.86	1.91

* Significantly different from BEFORE ($p < .05$)

† Significantly different (borderline) from BEFORE ($p < .10$)

Comparisons were made between the control group and the 1982 sample. The percentages of students saying "Yes" in the BEFORE tests were similar to those of the combined data presented in Table 1. Chi-square tests could find no differences (for any of the 10 phenomena) between the control group and the 1982 course sample on the BEFORE percentages. Significant differences were found for the AFTER percentages in the case of ESP, UFO, TRI, HEAL, and REIN. Furthermore, the differences for GHO, VOND, and BIO were of borderline significance ($p < .10$). The results of these between-groups comparisons, a stringent test for this kind of data, thus confirm the effectiveness of the course in reducing belief.

Separate analyses for males versus females indicated a general tendency for women to be slightly more willing to endorse belief in the phenomena, but chi-square tests found only two significant differences (ESP and ASTR) in the BEFORE data and only one in the AFTER data (ESP). Although the comparison was not statistically significant, males were more willing to endorse belief in UFOs.

I think the data collected over the three years of this study provide firm evidence that an academic course can reduce belief in a variety of paranormal phenomena. It is encouraging that the changes in some cases are still statistically reliable after one year. One of the most consistent results across the years came from the ESP and UFO data where the AFTER and FOLLOW surveys were always significantly different from the BEFORE. More lecture hours were spent on each of these topics than on any other single topic dealt with in the course.

It is not surprising that the reductions in the willingness to express belief dissipate quite a bit over the one-year interval because the students are in a largely pro-paranormal environment. The amount of material available in magazines, books, TV shows, newspapers, and movies that presents critical reviews and alternative explanations is indeed tiny in comparison to the plethora of positive coverage.

I tend to interpret the changes in belief effected by the course as being a result of reductions in the students' ignorance of what constitutes reliable evidence, although belief in the paranormal is no doubt supported by many other factors.

It is difficult to throw off the tendency to place firm trust in personal confirmatory instances. It is difficult not to be impressed when your old friend telephones just at the moment you have been thinking about him. The reliability of "unimpeachable" eyewitness testimony is difficult to ignore. That overall changes in belief in miracles were not found is consistent with the ignorance interpretation, in that such beliefs are likely to be based on faith rather than "evidence."

Although the immediate changes are quite large, it is disappointing that the willingness to express belief is still quite high. Shall I tell my colleagues that belief in ESP can be reduced from about 85 percent to

about 50 percent, or shall I tell them that about 50 percent are *still* willing to say that they believe in ESP, UFOs, and reincarnation? Can we at least take heart that only about 40 percent of a sample of well-educated twentieth-century urbanites believes in ghosts? ●

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