

# Investigating the Relationship Between Exposure to Television Programs that Depict Paranormal Phenomena and Beliefs in the Paranormal

Glenn G. Sparks and Will Miller

*This paper seeks to continue a program of research that explores the possible relationship between exposure to media messages and paranormal beliefs. Following the work of Sparks, Nelson and Campbell (1997), who reported the results of a random sample survey taken in 1994, this study reports the findings of a second random sample survey taken in the same geographic area several years later. The results of the survey show that paranormal beliefs are prevalent in the population and that they are related to reports of television exposure to programs that regularly depict paranormal phenomena. Like the findings reported by Sparks, Nelson and Campbell (1997), this study found that the relationship between TV viewing and paranormal beliefs was contingent upon prior personal experience with a paranormal event. However, the form of this contingent relationship was directly opposite from that observed in the earlier survey. In this study, the relationship between TV exposure and paranormal beliefs emerged only for respondents who reported personal experience with the paranormal. Plausible reasons for the conflicting findings and suggestions for future research are discussed.*

Scholars in a variety of disciplines have devoted increasing attention over the last decade to the study of paranormal beliefs. Belief in the “paranormal” refers to belief in one or more extraordinary phenomena that defy explanation according to current scientific understanding of natural law. The range of these alleged phenomena is quite broad and includes things such as ESP, (extrasensory perception), haunted houses, ghosts, devils, angels, spirits, reincarnation, telekinesis (the ability of the mind to move or bend objects just by thinking), flying saucers from outer space, space alien abductions, astrology, astral-projection (one’s spirit leaving the body, traveling some distance, and then returning), the abominable snowman, the Loch Ness monster, communicating with the dead, etc. In one national survey of over 1,000 adults, Gallup and Newport (1991) reported that paranormal beliefs were “widespread,” with nearly 50% of the respondents reporting belief in ESP and almost 30% reporting belief in haunted houses. Jaroff (1995) reported the results of a Roper poll indicating that, “nearly a quarter of Americans believe in extraterrestrial UFOs and astrology . . . ” (p. 75). Of some surprise to scholars, paranormal beliefs are not significantly lower among college students, even at institutions noted for science and engineering. For example, in one sample of students from Purdue University, a variety of different paranormal beliefs were endorsed by many of the respondents: the existence of ghosts (70%), accurate forecasting of the future by reading palms (40%), accurate predictions of the future made by psychics (37%), personal ability to

*Glenn G. Sparks (Ph.D., University of Wisconsin-Madison, 1983) is a Professor in the Department of Communication at Purdue University, West Lafayette, IN 47907. Will Miller (Ed.D., University of Massachusetts, 1976) is an author and corporate speaker who resides in West Lafayette, IN 47907. This paper won the “First Place” paper award in the open category of the research division of the Broadcast Education Association 2000 paper competition. It was presented at the annual meeting of the Broadcast Education Association in April, 2000 in Las Vegas.*

use extra-sensory perception on occasion (44%), and astral-projection (30%) (Sparks, Hansen, & Shah, 1994).

The willingness of so many college students and adults to express belief in the paranormal has attracted attention from a number of different quarters (quarters that are more or less scholarly) and is usually treated with great concern. In a guest essay for *Time* (April 13, 1992), James Randi, a magician and skeptic who has a standing, unclaimed, offer of one million dollars for anyone who can demonstrate the reality of a paranormal event under test conditions, wrote:

Acceptance of nonsense as a harmless aberration can be dangerous to us. We live in a society that is enlarging the boundaries of knowledge at an unprecedented rate, and we cannot keep up with much more than a small portion of what is made available to us. To mix our data input with childish notions of magic and fantasy is to cripple our perception of the world around us. We must reach for the truth, not for the ghosts of dead absurdities. (p. 80)

Concerns like those articulated by Randi have led to the formation of groups dedicated to skepticism and debunking unsupported claims of the paranormal. One of the best known groups of this type is the Committee for the Scientific Investigation of Claims of the Paranormal (*CSICOP*). This organization publishes the journal, *The Skeptical Inquirer*, which is devoted to updating readers on the latest paranormal claims and why they should be discounted. According to Paul Kurtz (1985), a member of the journal's editorial board, the purpose of this journal is to reveal the many "wishful" and "exaggerated" claims frequently made about paranormal events and to provide the public with the opportunity, "to learn about dissenting scientific studies . . ." (p. 357).

In addition to the literature published by skeptics, the mainstream academic community has devoted increasing attention to the study of paranormal beliefs as a phenomenon in its own right. Recent studies have linked belief in the paranormal to various personality types like authoritarianism (Heard & Vyse, 1999) and external locus of control (Groth-Marnat & Pegden, 1998) as well as to psychological disturbances like schizophrenia (Thalbourne, 1994) and delusional fears (Lange, 1999). Some scholars have also studied paranormal beliefs in the context of expressing concern for the development of critical thinking skills among college students (Morgan & Morgan, 1998).

Among scholars and skeptics, there is a common assumption that the mass media should take a major responsibility for the fact that so many people seem to accept paranormal claims uncritically. The rhetoric of Randi (1992) is quite typical when he wrote that the reason for the prevalence of "absurd beliefs" among the populaces of every culture ". . . is to be found in the uncritical acceptance and promotion of these notions by the media . . ." (p. 80). Other scholars echo Randi's proclamation (Feder, 1984; Kurtz, 1985). Kurtz (1985) called attention to the, "dominant influence of the media in forming [paranormal] attitudes and beliefs," and charged that the media often "behave totally irresponsibly in treating 'paranormal' occurrences" (pp. 359–360). Feder (1984) blamed the media for the problems faced by archaeologists in their attempts to overcome the many reports of "unverified claims." In a recent analysis of a program in the "Science Frontiers" series that appeared on *The Learning Channel*, Maione (1998) wrote that:

Programs on major TV networks often present a misleading account of the scientific status of paranormal claims by failing to fairly present the skeptical side of the story . . . A program that misrepresents the evidence for a particular claim is bad, but one that misrepresents the scientific method in doing so is many times worse. (p. 21)

The program that drew Maione's wrath was one titled, "Put to the Test" and it purported to investigate paranormal claims in an objective fashion.

The scholarly analysis of media responsibility for widespread paranormal belief is predicated on the assumption that media messages about the paranormal have direct effects on consumers of those messages. Maller and Lundeen expressed this view as early as 1932, but it appears to have gained many more adherents after the explosive growth of TV in the 1950s. Until very recently, the empirical evidence for the claim of media influence on paranormal beliefs was almost nonexistent. A few researchers reported results from surveys that indicated a tendency for respondents to cite media stories as the primary reason for their belief in some paranormal claims (Alcock, 1981; Evans, 1973). And apparently, as many as fifty newspaper editors including ones from *The Los Angeles Times* and *The Indianapolis Star* believe that their daily horoscope columns might influence readers to believe in the accuracy of astrological forecasts. These editors are among the few that publish disclaimers next to the daily horoscope column (B. Karr, personal communication, April, 1993; also see Gersh, 1987).

The lack of empirical evidence to support the claim that media messages about the paranormal influence paranormal beliefs is a state of affairs that holds considerable potential to embarrass the scientific and skeptical community. Consider the fact that while simultaneously blaming the media for promoting unproven ideas about the paranormal, many scientists, philosophers and skeptics have little empirical evidence to cite for their own claim of media impact in this domain. Avoiding this potential embarrassment certainly constitutes a major practical reason for scholars to take up rigorous study of the relationship between media exposure to messages about the paranormal and paranormal beliefs. In addition to this practical reason, there are obvious theoretical reasons for such investigation. While the literature on television's impact is dense with studies on media violence (see National Television Violence Study, 1997), this density has produced gaps in understanding other kinds of media effects. Recent movies like *The Sixth Sense*, *Ghost*, *Dogma*, and *The Blair Witch Project* combined with a 1999 prime-time TV alignment that includes such programs as *Roswell*, *Charmed*, *Touched by an Angel*, *Buffy the Vampire Slayer*, and *Unsolved Mysteries*, suggests that the prevalence of paranormal media content far surpasses what might be expected in the scholarly literature regarding our understanding of how such presentations affect audiences. Moreover, investigating this area may lend insight into how individual members of the audience use this type of media in their overall diet of entertainment.

Earlier in this decade, Sparks, Hansen and Shah (1994) published the first study in a line of investigations (see Sparks, 1998) about the relationship between exposure to paranormal media and paranormal beliefs. In a laboratory experiment, these authors manipulated the nature of a disclaimer that was presented before subjects viewed the program, *Beyond Reality*. This program appeared regularly on the USA network along with the claim at the outset that the scenes depicted in the show were based on actual reports. Subjects in the study who heard disclaimers that emphasized the fictional or impossible nature of the show's content were significantly less likely to endorse paranormal beliefs after the program than subjects who heard no disclaimer at all. In a second experiment, Sparks, Sparks, & Gray (1995) found that subjects who viewed a program depicting UFOs (unidentified flying objects) tended to increase their belief in the existence of UFOs from outer space. A third

experiment (Sparks, Pellechia, & Irvine, 1998) exposed subjects to one of two different segments from a news program about UFOs. The segments differed according to the extent to which a scientific authority challenged the view that the alleged flying saucers were actually visitors from outer space. Subjects who viewed the story that included the challenge from scientific authority decreased their beliefs in UFOs; subjects who viewed the story that included no such challenge increased their beliefs. A fourth experiment (Sparks & Pellechia, 1997) investigated the role of a scientific authority in a magazine story about UFOs. Once again, the results showed that subjects expressed different UFO beliefs depending upon whether or not a scientist endorsed the existence of UFOs.

In addition to this small group of experiments, Sparks, Nelson, and Campbell (1997) reported the findings from a random sample survey of 120 respondents living in a mid-sized city in the Midwest. Their results showed that, as predicted, there was a significant relationship between exposure to TV programs that featured paranormal content and paranormal beliefs. These authors had predicted that in accord with the “resonance” hypothesis from cultivation theory (Gerbner, Gross, Morgan, & Signorielli, 1994), the relationship between TV exposure involving the paranormal and belief in the paranormal should be more likely among respondents who reported having a personal experience with the paranormal. According to the theory, resonance results when media consumers get a “double-dose” of the same message—media consumption and personal experience both communicate the same reality. In such a case, the influence of the media message is thought to be even greater. However, Sparks et al. found no evidence for resonance in their study. In fact, the exact opposite finding emerged. The relationship between media exposure to the paranormal and paranormal beliefs was present only among respondents who reported that they had never had a paranormal experience.

In this paper, we were interested in continuing the investigation of potential media impact on paranormal beliefs by extending the available survey data on this topic. Following Sparks, et al. (1997), we examined the relationship between television exposure and paranormal beliefs through a larger random-sample telephone survey in the same mid-sized city in the Midwest. Of course, the survey method does not permit definitive statements about *causal* relationships, but it does permit generalization beyond a small sample and enables insight about the prevalence of paranormal beliefs and their relationship to TV consumption. In this case, we proceeded with the present study for two primary reasons. First, we were particularly interested in revisiting the resonance hypothesis in order to see if the earlier disconfirmation could be replicated. Such a study seems to be called for given the fact that evidence for the resonance hypothesis has appeared in other areas of investigation and there appears to be a clear theoretical rationale for its support in the study by Sparks, et al. (1997). Second, the study of the relationship between media consumption and paranormal beliefs is a fledgling line of investigation. Even a single replication of results from an existing survey goes a considerable distance in building confidence that the initial results are not statistical anomalies.

Given our interest in carrying out a replication of the earlier survey by Sparks et al. (1997), our general theoretical approach to this study, like that of the prior survey, calls upon the theory of media cultivation. According to this perspective, exposure to TV programming presents a particular reality about the world that is gradually adopted by viewers as an accurate representation of the world (Gerbner, Gross,

Morgan, & Signorielli, 1986; Ogles, 1987). One of the criticisms of cultivation theory is that the particular mechanisms that might be responsible for the effect are not well specified or understood (see Hawkins, Pingree, & Adler, 1987). This weakness has encouraged some scholars to offer various explanations that go beyond Gerbner's original formulation, but might provide some plausible insights about how cultivation might work. For example, Ogles & Hoffner (1987) relied upon the notion of an "availability heuristic" (Tversky & Kahneman, 1973) in offering an explanation for media cultivation. The essence of this idea is that when viewers are called upon to make judgments about the real world, they draw heavily upon whatever is readily available in their memory that might be relevant to the judgment. Heavy and recent exposure to TV programs constitutes one likely source of information for viewers to incorporate in their judgments [Shrum (1996) tests this idea in the context of media cultivation]. As noted by Sparks, et al. (1997), a number of studies support the idea that people are more likely to accept something as true when they are exposed to the idea repeatedly (Arkes, Hackett, & Boehm, 1989; Bacon, 1979; Begg, Anas, & Farinacci, 1992; Begg & Armour, 1991; Hasher, Goldstein, & Toppino, 1977; Schwartz, 1982). Zaragoza and Mitchell (1996) go even farther in noting that the actual truth of the repeated statements appears to be irrelevant to their acceptance. Mere repetition leads to more acceptance. If this is the case, following Sparks, et al. (1997), it seems reasonable to expect that viewers who see repeated depictions of the paranormal on television might be influenced by these depictions in situations where they are called upon to express judgments about the reality of paranormal phenomena. Of course, this theoretical orientation assumes that exposure to TV will result in repeated exposure to paranormal depictions. While there appear to be no content analyses in the literature to substantiate this assumption, there is little question upon examining the TV schedule (see title mentioned earlier) that paranormal depictions show up in abundance. It is also the case that Hollywood producers generally acknowledge that the writer's strike in the 1980's produced a heavy reliance on "reality" television, which led inevitably to more frequent presentations of UFO sightings, psychics, and the like [R. Kiviat, personal communication, November 9, 1999].<sup>1</sup> Data from systematic content analyses would be a welcome addition to this literature.

In proceeding with the present study, our first expectation about the results of the survey followed Sparks, et al. (1997) and is supported by the literature reviewed to this point:

*H1:* Television viewing (particularly viewing of programs that contain paranormal events) will be positively correlated with the tendency to endorse beliefs in paranormal phenomena.

If this correlation did emerge, it need not indicate the presence of a media effect. Instead, it might indicate that individuals who tend to believe in the paranormal tend to seek out exposure to media containing these themes. Of course, the possibility of a reciprocal relationship between the two variables is also possible.

In the light of Sparks et al.'s (1997) failure to find evidence for the resonance hypothesis, in addition to H1, we had posed a research question:

*RQ1:* Would any relationship between television exposure and paranormal beliefs be stronger for individuals who report that they have had some personal life experience with paranormal events?

It seems clear that cultivation theory would predict such a finding, but the first survey to test this notion failed to uncover support for the idea.

Finally, we were generally interested in the impact of demographic variables, if any, on the relationship between TV exposure and paranormal beliefs. This led to the formulation of a second research question:

*RQ2:* What impact do demographic variables like age, sex, income, education and religious belief have on the relationship between TV exposure and paranormal beliefs?

## Method

### *Respondents*

Using randomly selected pages from the city phone directory, followed by randomly selected numbers from those pages, 200 telephone interviews were completed during the Fall of 1997 in a medium-sized city in the Midwest (males:  $n = 93$ ; females:  $n = 102$ ).<sup>2</sup> The interviewers were members of an advanced undergraduate course in mass communication theory. Each interviewer was trained in two sessions by the authors and sample interviews were conducted to heighten standardized procedures across the interviewers. In total, 284 individuals were contacted and 84 refused to participate (final response rate = 70%). The interviews took about 15-minutes to complete. All respondents were screened at the outset of the conversation to assure that they were at least 18 years of age.

### *Measurement*

*Television viewing habits.* Following procedures used in past studies of this type (Sparks & Ogles, 1990; Sparks, et al. 1997), respondents were asked to estimate the amount of time they spent watching television. Respondents were asked to estimate the total number of hours of television they watched on an average weekday, an average Saturday, and an average Sunday. The weekday total was multiplied by five and added to the two weekend day totals to yield an average viewing time for the week in hours.

Respondents were also asked about their exposure to several specific programs that routinely feature paranormal themes: *Unsolved Mysteries*, *Sightings*, *The X-Files*, *Early Edition*, *Psychic Friends*, *Beyond the Paranormal Borderline*, *Touched By an Angel*, *Profiler*, and *Millennium*. For each of these programs, they were asked to report if they had ever viewed the program. If a respondent indicated that he/she had seen the program before, a follow-up question asked for an estimate of how many times the program had been seen. The categories for this estimate were: "1-2 times", "3-5 times", "6-10 times", and "over 10 times". These categories were provided as a convenient way for respondents to estimate the number of times the program had been viewed. For purposes of coding and data analysis, the maximum number in each category was recorded as the response and the variable was treated as a ratio level variable. Responses in the maximum category were coded as "11."

*Paranormal beliefs.* For purposes of comparison, the same twenty-item scale employed by Sparks, et al. (1997) was used to assess respondents' paranormal beliefs. This measure was based on other measures that have appeared in the literature but sought to improve on a number of problems with question wording and ambiguous referents (see Jones, Russell, and Nickel, 1977; Tobacyk & Milford, 1983). The measure assesses paranormal belief in ten different areas: 1) UFOs and space aliens, 2) astral-projection, 3) extrasensory perception (ESP), 4) astrology or the use of horoscopes, 5) supernatural physical healing, 6) palm reading, 7) ghosts or

haunted houses, 8) prophetic dreams, 9) telekinesis or moving objects just by thinking, and 10) general psychic powers (e.g., precognition, and the ability to know the location of a crime scene only from objects belonging to the victim). Interviewers asked respondents to listen to each belief statement, and to respond by indicating that they either agreed with the statement, disagreed with the statement, or were uncertain about the extent to which they either agreed or disagreed. Responses were coded for each item such that belief in the paranormal was coded as "2", uncertainty was coded as "1", and disbelief was coded as "0". Consequently, scores on the measure could range from "0" to "40" with higher scores indicating greater belief in the paranormal.<sup>3</sup> Two items were included on the measure for each of the ten areas listed above. One of these items was worded so that agreement reflected belief in the paranormal; the other was worded so that agreement reflected disbelief. These latter items were recoded so that high scores on the 20-item measure reflected the tendency to believe in paranormal phenomena. The complete 20-item measure along with the percentages of respondents who either agreed or disagreed with the items appears in Table 1. The items were presented in the order that they appear in the table, which was determined by random selection.

*Paranormal experiences.* At the end of the survey, respondents were asked if they had ever experienced anything that fell outside the realm of normal experience. Several examples were given to provide a context for this question when the interviewer said: "For example, some people say they've encountered ghosts or flying saucers, while others may claim that they've caught a glimpse of the future before it occurred. These events might be called paranormal. Has anything like this ever happened to you?" Responses of "yes" were coded with "1" and responses of "no" were coded as "0".

*Demographic variables.* Respondents were also asked to provide general demographic information, including their age, sex, level of education, income level, intensity of religious belief (scale of "1" to "10" with "10" being most intense) and whether or not they typically attended a weekly religious service. Responses of "yes" were coded with "1" and responses of "no" were as "0".

## Results

### *Prevalence of Paranormal Beliefs*

Table 1 displays the percentages of respondents who either agreed, disagreed, or were undecided about each item. These data show that belief in paranormal phenomena are quite common. For example, just under 50% of the respondents indicated a belief in ghosts. Nearly one-third of the respondents reported that sometimes they had been able to read another person's mind through extrasensory perception (ESP). Nearly 45% of the respondents believed in UFOs from outer space, and just under one-fifth of the respondents believed that some people could bend metal just by thinking. These results parallel those reported by Gallup and Newport (1991) in a random sample of Americans. They are also consistent with data reported from a convenience sample of college students (Sparks, Hansen, & Shah, 1994). Overall, these data provide a replication of the survey findings from Sparks, et al. (1997). The associated percentages for each item were very close to the results reported in their study and in most cases did not differ by more than what might be expected as a result of sampling error (95% confidence interval is  $\pm 6.9\%$ ).

TABLE 1  
 PERCENTAGES OF RESPONDENTS INDICATING AGREEMENT, DISAGREEMENT, OR UNCERTAINTY ABOUT  
 PARANORMAL BELIEFS ITEM

	Agree	Undecided	Disagree
Daily horoscopes that appear in the newspapers DO NOT provide accurate information about a person's life . . . . .	81.5%	9.5%	9.0%**
Some people are able to levitate or lift objects just by thinking . . . . .	18.5%	14.0%	67.5%
I do NOT believe that there is any such thing as haunted houses . . . . .	37.5%	21.0%	41.5%**
I believe that sometimes I can tell what another person is thinking through ESP or extrasensory perception . . . . .	32.5%	7.0%	60.0%
No one can really tell about other people's lives just from looking at the lines on the palms of their hands . . . . .	68.5%	14.5%	16.5%**
Some people have the power of astral-projection, that is they can willingly leave their body for short periods of time to travel to another part of the Universe and then return . . . . .	7.5%	16.0%	76.0%
I do NOT believe that anyone really has psychic powers . . . . .	41.0%	15.0%	44.0%**
I believe that some people have a special gift to heal other people simply by touching them . . .	22.5%	16.0%	61.5%
Some people claim that they have had dreams about future events that actually come true, but I believe that these cases are simply coincidence . . . . .	43.0%	15.0%	42.0%**
I believe that some people have actually seen flying saucers that come from outer space . . .	34.0%	23.0%	42.5%
No one can bend metal just by thinking about it Astrology, or the use of horoscopes, has been proven to be valid for finding out the best ways in which people should act in their daily lives . . . . .	72.5%	13.0%	14.0%**
I don't think ESP or extrasensory perception is possible . . . . .	7.0%	18.5%	73.5%
I believe that some people have actually seen ghosts . . . . .	39.0%	19.5%	41.0%**
I DO NOT believe that astral-projection is possible . . . . .	45.5%	16.5%	37.0%
Some people can really tell the future about another person's life just by reading the palm of their hand . . . . .	64.0%	17.5%	17.0%**
I DO NOT believe that there has ever been a case where another human being has been captured by a space alien . . . . .	8.0%	15.0%	75.5%
Some people have a special gift that enables them to see things in the future that have not yet happened . . . . .	58.0%	22.5%	18.5%**
Anyone who claims that he/she can heal other people just by touching them is either lying or badly mistaken . . . . .	44.0%	16.0%	39.0%
There are some people who have a special ability to help the police solve crimes because they can psychically receive information just by touching objects that belong to the crime victims . . . . .	57.5%	16.5%	25.0%**
	35.5%	19.0%	45.0%

Note. Percentages are based on 200 respondents for each item. Items marked with \*\* indicate that disagreement implies belief in the paranormal phenomenon. For unmarked items, agreement implies belief in the paranormal phenomenon.



### *The Measure of Paranormal Beliefs*

After recoding the items that were negatively worded, we combined the scores across the 20 items of paranormal beliefs to form an additive index. Cronbach's alpha on this index was .88. Evidence for the measure's validity is indicated by the fact that it was significantly correlated with the tendency for respondents to report that they had experienced a paranormal event in their own life [ $r = .46, n = 190; p < .001$ ]. Sparks, et al. (1997) found the same correlation ( $r = .47$ ) in their study. In order to determine if the structure of this measure was multi-dimensional, the 20 items were submitted to a maximum likelihood factor analysis with varimax rotation. As observed by Sparks, et al. (1997), five factors emerged initially from this analysis with eigenvalues greater than 1.0. However, in this case, the first factor accounted for 30% of the variance and none of the remaining factors accounted for at least 10% of the variance. Moreover, the items loading on this first factor were not easily interpretable and the reliability of an additive index consisting of these items (.60) failed to meet the conventional minimum established for alpha (.70). Consequently, we decided to employ the entire 20-item measure as our main measure of paranormal beliefs. It should be noted that the results of the factor analysis do diverge somewhat from those obtained by Sparks, et al. (1997), who found an interpretable, two-factor solution for this measure, both of which formed reliable sub-scales.

### *The Measures of Television Viewing*

Two measures of viewing were constructed from the responses. The first measure was a "total viewing" measure in hours-per-week and is described above. Only six respondents in the sample (3%) reported viewing no television at all during a typical week. At the other extreme, one viewer reported viewing 74-hours of TV during a typical week (10+ hours per day). The median number of hours viewed per week was 18, or about 2-3 hours-per-day. A second viewing measure was designed to assess viewing of programs that were known to feature paranormal phenomena regularly. The number of times that respondents indicated seeing each of the programs was summed together to form a total measure for paranormal programming.

### *Testing the Hypothesis and Research Questions*

In order to test the first hypothesis, we initially computed correlations between the measures of TV viewing and the measure of paranormal beliefs. The measure of total TV viewing was significantly correlated with paranormal beliefs [ $r(190) = .19, p < .01$ ]. Consistent with H1's prediction that this relationship should be more likely for the viewing of paranormal TV programs, we found that the measure of paranormal TV viewing was significantly correlated with paranormal beliefs [ $r(191) = .31, p < .001$ ]. Since the second research question sought information about the impact of demographic variables on the relationship between TV exposure and paranormal beliefs, we ran two regression equations to explore this issue—one for each of the two viewing measures. The independent variables for each equation were identical. Age, sex, income, education, weekly attendance at a religious service, and intensity of religious belief were all entered into the equation in a single block. This was followed by entering, in respective equations, either the total TV viewing measure, or the measure of paranormal viewing. This permitted us to examine how

TABLE 2  
REGRESSION RESULTS FOR PREDICTING BELIEF IN THE PARANORMAL FROM TOTAL TELEVISION VIEWING

Variables Entered	Multiple R	R <sup>2</sup>	Beta
Step 1:			
Age _____			-.06
Sex _____			.17* ( $p < .05$ )
Income _____			.07
Education _____			-.32* ( $p < .001$ )
Weekly Religious Service _____			-.13
Intensity of Religious Belief _____			.07
	.40	.16	
Step 2			
Total TV Viewing	.42	.18	.13

Note. The entire regression model was significant [ $F(7,174) = 5.31; p < .001$ ].

much variance in paranormal beliefs could be accounted for by TV viewing after controlling for these demographic factors. Table 2 displays the results of the equation using the total TV viewing measure as a predictor variable; Table 3 displays the results using the measure of paranormal viewing.

As Table 2 reveals, the demographic variables accounted for 16% of the variance in paranormal beliefs [ $F(6,175) = 5.56, p < .001$ ]. Total TV viewing accounted for an additional 2% of the variance, but this was not enough to meet the conventional level of significance [ $p < .07$ ]. The entire regression model accounted for 18% of the variance in paranormal beliefs [ $F(7,174) = 5.31, p < .001$ ]. The similar equation for paranormal TV viewing (Table 3) shows that viewing of paranormal TV accounted for an additional 4% of the variance in paranormal beliefs [ $p < .003$ ]. The entire regression model accounted for 20% of the variance in paranormal beliefs [ $F(7,175) = 6.16, p < .001$ ].

The equations in Tables 2 and 3 reveal information pertinent to RQ2. Age, income, weekly attendance at a religious service, and intensity of religious belief proved to be unrelated to paranormal beliefs. However, sex and education did predict belief in the paranormal. The signs of the beta coefficients indicate that females were more likely to express belief in the paranormal than were males and people with lower levels of education were more likely to express belief than were people with higher levels. The effect associated with education is much stronger than the effect for sex.

TABLE 3  
REGRESSION RESULTS FOR PREDICTING BELIEF IN THE PARANORMAL FROM PARANORMAL VIEWING

Variables Entered	Multiple R	R <sup>2</sup>	Beta
Step 1:			
Age _____			-.07
Sex _____			.17* ( $p < .05$ )
Income _____			.07
Education _____			-.31* ( $p < .001$ )
Weekly Religious Service _____			-.12
Intensity of Religious Belief _____			.07
	.39	.15	
Step 2			
Viewing Paranormal	.45	.20	.22* ( $p < .003$ )

Note. The entire regression model was significant [ $F(7,175) = 6.16; p < .001$ ]. The betas for Step 1 are slightly different than the ones listed in Table 1 due to the fact that one respondent had missing data for the analysis in Table 1 and was not included in the analysis.

TABLE 4

REGRESSION RESULTS FOR PREDICTING BELIEF IN THE PARANORMAL FROM PARANORMAL VIEWING AMONG RESPONDENTS WHO REPORTED NO PRIOR EXPERIENCE WITH THE PARANORMAL

Variables Entered	Multiple R	R <sup>2</sup>	Beta
Step 1:			
Age _____			-.05
Sex _____			.24* ( $p < .02$ )
Income _____			-.02
Education _____			-.18
Weekly Religious Service _____			-.04
Intensity of Religious Belief _____			.02
	.32	.10	
Step 2			
Viewing Paranormal	.33	.11	.09

Note: The entire regression model was significant [ $F(7,119) = 2.04; p < .05$ ].

In order to investigate the resonance hypothesis implied in RQ1, we ran regression equations separately for respondents who reported prior experience with a paranormal event ( $n = 58$ ; 29%) and for those who reported no prior experience ( $n = 138$ ; 69%). These equations were set up in exactly the same way as the ones reported in Tables 2 and 3. When we used the measure of total TV viewing, the regression analyses revealed that after considering the demographic variables, viewing was unrelated to paranormal beliefs for both groups of respondents. However, when we used the measure of paranormal TV viewing, different results emerged for each group. Table 4 displays the results for the group who reported no prior experience with a paranormal event. Table 5 displays the results for the group who did report such an experience. As these tables reveal, viewing paranormal programs on TV was unrelated to paranormal beliefs for those who reported no prior experience with the paranormal. But for those who did report such an experience, viewing paranormal programs contributed an additional 11% of significant variance to the prediction of paranormal beliefs ( $p < .007$ ).

## Discussion

Consistent with past research, Table 1 reveals that paranormal beliefs were certainly prevalent in the random sample we drew from the Midwestern city. If the influence of TV programs on an audience is likely to be greater among those who are

TABLE 5

REGRESSION RESULTS FOR PREDICTING BELIEF IN THE PARANORMAL FROM PARANORMAL VIEWING AMONG RESPONDENTS WHO REPORTED PRIOR EXPERIENCE WITH THE PARANORMAL

Variables Entered	Multiple R	R <sup>2</sup>	Beta
Step 1:			
Age _____			-.12
Sex _____			.09
Income _____			.19
Education _____			-.46* ( $p < .002$ )
Weekly Religious Service _____			.09
Intensity of Religious Belief _____			-.02
	.50	.25	
Step 2			
Viewing Paranormal	.60	.36	.35* ( $p < .007$ )

Note: The entire regression model was significant [ $F(7,47) = 3.79; p < .003$ ].

undecided about a given phenomenon, then the percentages of respondents who expressed uncertainty about the paranormal are particularly important for the study of media impact. As the table shows, there are significant numbers of respondents in this category for most of the belief items. Of particular interest in Table 1 are the percentages of respondents who indicated uncertainty about various paranormal belief items. It seems reasonable to assume that in areas of uncertain belief, the mass media are potentially a more powerful source of influence. While the percentages of respondents who endorsed belief in the paranormal were relatively unchanged from the earlier survey reported by Sparks et al. (1997), the data continue to indicate widespread belief and uncertainty about the existence of paranormal phenomena. In such a cultural environment, media messages about the paranormal would seem to hold considerable potential to reinforce and change what people believe.

The first hypothesis was that television viewing (particularly viewing of paranormal programs) would be positively correlated with paranormal beliefs. This hypothesis was supported. As the regression equations reported in Tables 2 & 3 reveal, viewing paranormal programs accounts for a significant portion of variance in paranormal beliefs even after controlling for age, sex, income, education, and two different measures of religiosity. It is important to note that this result cannot be interpreted unequivocally as evidence for the impact of paranormal programming. Surveys of this type simply do not permit conclusions that establish causal direction. It is always possible that some unmeasured third variable accounts for the relationship that was observed. It is also possible that the relationship indicates that those who believe in the paranormal are more likely to view paranormal programs. While this is certainly a reasonable conjecture, it is also important to recall that the experimental evidence reviewed earlier clearly shows that exposure to paranormal programs affects beliefs. Of course, it is possible that the relationship is bidirectional. Future research should be designed to test the selective exposure hypothesis that believers in the paranormal seek out paranormal media.

RQ1 asked about the evidence regarding cultivation's resonance hypothesis. The earlier study by Sparks et al. failed to find any support for resonance. However, in the present study, evidence consistent with the resonance hypothesis did emerge. The relationship between media exposure to the paranormal and paranormal beliefs was present only for those respondents who reported personal experience with a paranormal event. This finding is completely counter to the one found in the earlier survey of the same community where the relationship held only for those who reported *no* personal experience with a paranormal event.

One approach to these conflicting findings is to compare the two surveys and focus on the differences between the two studies. As in any replication study, it is prudent for the investigators to make changes from the initial study in ways that might enhance the generalizability of the findings. In this study, we measured exposure to a greater number of paranormal programs (nine vs. four) than did Sparks et al. (1997). Perhaps the most significant difference in the measures that were used in the two studies is the fact that in the present study, there was a total of five paranormal programs (55% of the paranormal programming measure) that could be classified as fiction (*X-Files*, *Early Edition*, *Touched by an Angel*, *Profiler*, and *Millennium*) compared to only one such program (*X-Files*) in the earlier survey (25% of the paranormal programming measure). If the current measure of paranormal programming was heavily weighted toward fictional programs and the one used in the earlier

survey was weighted more toward reality programs, this difference could play some role in the different pattern of findings uncovered in the two surveys. For example, it could be that the results reported in this study supporting the resonance hypothesis are more likely to hold when a measure of fictional programming is used. For respondents who reported a prior experience with the paranormal, fictional programs may constitute the “double-dose” of the paranormal message referred to in the resonance hypothesis. For those with no prior paranormal experience, viewing fictional paranormal programming does not constitute a double-dose, thus reducing the likelihood of a relationship between viewing these programs and belief in the paranormal. In the study by Sparks et al. (1997) that relied upon a measure of paranormal programs that was weighted toward reality programs, viewing of these programs was significantly related to paranormal beliefs for viewers with no prior experience with the paranormal. It could be that for these viewers, the reality of the depictions tends to be persuasive because the viewers have no personal experience to counter the “reality” depicted. The fact that Sparks et al. (1997) failed to confirm the resonance hypothesis for those with prior experience with the paranormal may suggest that when reality programs are involved, a different process takes place that overrides the cultivation process of resonance. Perhaps for these viewers, the apparent reality of the depictions triggers a cognitive process that involves contrast and comparison between the “real” experiences depicted in the media and the viewers’ own private experiences. Perhaps these processes lead viewers to note the dissimilarities between the “real” experiences depicted in the media and personal experiences. In such cases, instead of a “double-dose” of the same message, viewers may process the media message as running counter to their own experiences.

If the above analysis has any merit, it suggests that future attention should be directed toward studying the role of fiction and reality programs in the cultivation of paranormal beliefs. It is interesting to note that Sparks et al. (1997) underscored the need to examine perceived realism of paranormal depictions as an important variable in understanding the impact of paranormal TV on paranormal beliefs. We believe it is important to re-emphasize this point. Following Potter’s work on perceived reality (Potter, 1986, 1988), we expect that media impact in this domain might be dependent on such reality judgments. It is also the case that paranormal programming probably produces a much wider range of reality judgments than other types of programming (e.g., news programming). Therefore, it appears critical to examine this variable in future studies. Of course, this analysis is only one possible explanation for the conflicting results between the two studies, but it would appear to be a plausible explanation that is worth exploring in future investigations.

RQ2, which asked about the impact of demographic variables on paranormal beliefs, was evaluated in the regression equations. The findings that emerged in the regression equations were informative with respect to these variables. There was no evidence that age, income, weekly attendance at a religious service, or general intensity of religious belief were related to paranormal beliefs. This might not be surprising with respect to age or income, but the skeptical community has often associated religious belief with belief in the paranormal. However, our finding that neither of the measures pertaining to religion were predictors of paranormal belief is consistent with the findings of several other studies (Duncan, Donnelly, & Nichol-

son, 1992; Grimmer & White, 1990; Williams, Taylor, & Hintze, 1989). Data seems to be accumulating to suggest that the relationship between religious belief and paranormal belief may not be very strong. Undoubtedly, there are conceptual grounds for distinguishing between these two domains.

There was some evidence for a weak relationship between biological sex and belief in the paranormal; females showed a slight tendency to endorse paranormal beliefs more than males. There is some precedent in the literature for this finding (Wolfradt, 1997), but in general, the differences between males and females in this realm appear to be small. The largest relationship between paranormal beliefs and a demographic variable was found for level of education. As one might expect, individuals with higher levels of education were less likely to endorse paranormal beliefs. This finding appears to be consistent with the notion that education encourages the development of critical thinking skills that result in closer scrutiny and ultimate rejection of many paranormal claims. Consistent with this idea, Gray and Mill (1990) found a significant relationship between the application of critical thinking skills and rejection of paranormal beliefs.

The data accumulating on the relationship between media exposure and beliefs in the paranormal suggest that there may be an important media effect in this realm that has received relatively little attention from scholars of mass communication. It is important for future studies to replicate the findings that have been reported thus far and, in the case of the resonance hypothesis, seek to untangle the inconsistent results that have emerged to date. Like the survey reported by Sparks et al. (1997), this study has the strength of using a random sampling procedure of an entire city. This method is considerably stronger than one that appears frequently in the literature—convenience samples of college students. The use of random samples of larger populations enables some meaningful generalization of research findings. Laboratory experiments and surveys of this type should continue to be useful tools for advancing our knowledge about the media's role in beliefs about paranormal phenomena.

## Conclusion

Research on the influence of the media on beliefs in the paranormal is still in its infancy. The studies to date, including this one, demonstrate that this area of inquiry may hold considerable promise in advancing our understanding about media effects. One glaring hole in the current literature is the lack of any systematic content analysis of media content that focuses on paranormal themes. Clearly, this sort of study is overdue and stands to inform us about the prevalence of these themes in a systematic way. Ultimately, we believe that research on the media and paranormal beliefs stands to offer new insights about media effects as well as the way individuals form their basic belief systems. There may also be implications for the design of educational curricula on critical thinking and the media. In the final analysis, we believe that paranormal beliefs and the media's role in cultivating or discouraging them is a critical topic for mass communication scholars to understand well. Society is shaped by what people believe. If the media play a central role in encouraging people to adopt beliefs about reality that are unsubstantiated, there may well be widespread implications for future society that are incalculable at the present time.

## Notes

<sup>1</sup>Robert Kiviat is a Hollywood producer who has worked on a number of programs that deal with the paranormal. His most famous work is probably the "Alien Autopsy" series produced for the FOX network. In a series of programs, Kiviat shows footage of an alien autopsy that supposedly originated from the now infamous Roswell incident in the late 1940s. Over the series of programs, it becomes clear that there is good reason to conclude that the film is a hoax. Kiviat takes primary responsibility for investigating the film's origins and for tracking down the evidence that led to the verdict that the film was a hoax.

<sup>2</sup>The sample was random with respect to the numbers dialed, but not with respect to the people living in the household contacted. Unless the person answering the phone was under 18-years of age, the interview was presented to the person who answered the phone. Persons under 18-years old were not used due to the additional contingencies of parental permission that would have been involved in order to satisfy guidelines for ethical treatment of human subjects. In the case of 5 respondents, data on sex was not collected. The city used for the sample was the same one used in the study by Sparks et al. (1997). It has a population of about 50,000 with a very small minority population (i.e., less than 2% of any particular minority group).

<sup>3</sup>Although "uncertainty," "belief," and "disbelief" appear to be categories on a nominal scale, they clearly represent levels of certainty in the belief system such that the scales are at least ordinal. In this respect, the scale is no different than any 5-point scale that calls for an indication of agreement with an attitude statement. Although strictly qualifying as only ordinal measures, such scales are commonly treated as if they are interval. A long history of statistical testing reveals that in most cases, treating ordinal level data as if it were interval level causes few differences of consequence in the data analysis.

## References

- Alcock, J.E. (1981). *Parapsychology: Science or magic?* Oxford, England: Pergamon Press.
- Arkes, H.R., Hackett, C., & Boehm, L. (1989). The generality of the relation between familiarity and judged validity. *Journal of Behavioral Decision Making*, 2, 81–94.
- Bacon, F.T. (1979). Credibility of repeated statements: Memory for trivia. *Journal of Experimental Psychology: Human Learning and Memory*, 5, 241–252.
- Begg, I., & Armour, V. (1991). Repetition and the ring of truth: Biasing comments. *Canadian Journal of Behavioral Science*, 23, 195–213.
- Begg, I.M., Anas, A., & Farinacci, S. (1992). Dissociation of processes in belief: Source recollection, statement familiarity, and the illusion of truth. *Journal of Experimental Psychology: General*, 121, 446–458.
- Doob, A.N., & Macdonald, G.E. (1979). Television viewing and fear of victimization: Is the relationship causal? *Journal of Personality and Social Psychology*, 37, 170–179.
- Duncan, D.F., Donnelly, J.W., & Nicholson, T. (1992). Belief in the paranormal and religious belief among American college students. *Psychological Reports*, 70, 15–18.
- Evans, C. (1973). Parapsychology—what the questionnaire revealed. *New Scientist*, 25, 209.
- Feder, K.L. (1984). Irrationality and popular archaeology. *American Antiquity*, 49, 525–541.
- Gallup, G.H., & Newport, F. (1991). Belief in paranormal phenomena among adult Americans. *Skeptical Inquirer*, 15, 137–146.
- Gerbner, G., Gross, L., Morgan, M., & Signorielli, N. (1986). Living with television: The dynamics of the cultivation process. In J. Bryant & D. Zillmann (Eds.), *Perspectives on media effects* (pp. 17–40). Hillsdale, New Jersey: Lawrence Erlbaum.
- Gerbner, G., Gross, L., Morgan, M., & Signorielli, N. (1994). Growing up with television: The cultivation perspective. In J. Bryant and D. Zillmann (Eds.), *Media effects: Advances in theory and research* (pp. 17–41). New Jersey: Lawrence Erlbaum.
- Gersh, D. (March 18, 1987). Disclaiming horoscopes. *Editor and Publisher*, 22–23.
- Gray, T., & Mill, D. (1990). Critical abilities, graduate education (Biology vs. English), and belief in unsubstantiated phenomena. *Canadian Journal of Behavioural Science*, 22, 162–172.
- Gray, K., & Sparks, G.G. (1996). [A Content Analysis of Paranormal Events on Prime-Time Television.] Unpublished raw data.
- Grimmer, M.R., & White, K.D. (1990). The structure of paranormal beliefs among Australian psychology students. *Journal of Psychology*, 124, 357–370.
- Groth-Marnat, G., & Pegden, J.A. (1998). Personality correlates of paranormal belief: Locus of control and sensation seeking. *Social Behavior & Personality*, 26, 291–296.
- Hasher, L., Goldstein, D., & Toppino, T. (1977). Frequency and the conference of referential validity. *Journal of Verbal Learning and Verbal Behavior*, 16, 107–112.
- Hawkins, R.P., Pingree, S., & Adler, I. (1987). Searching for cognitive processes in the cultivation effect: Adult and adolescent samples in the United States and Australia. *Human Communication Research*, 13, 553–577.
- Heard, K.V., & Vyse, S.A. (1999). Authoritarianism and paranormal beliefs. *Imagination, Cognition & Personality*, 18, 121–126.

- Hirsch, P.M. (1980). The "scary world" of the nonviewer and other anomalies: A reanalysis of Gerbner et al.'s findings on cultivation analysis, part I. *Communication Research*, 7, 403–456.
- Jaroff, L. (1995). Weird Science. *Time*, (May, 15), 75–76.
- Jones, W.H., Russell, D.W., & Nickel, T.W. (1977). Belief in the paranormal scale: An objective instrument to measure belief in magical phenomena and causes. *JSAS Catalog of Selected Documents in Psychology*, 7, 100. (Ms. No. 1577).
- Korem, D. (1988). *Powers: Testing the psychic & supernatural*. Downers Grove, IL: InterVarsity Press.
- Kurtz, P. (1985). The responsibilities of the media and paranormal claims. *Skeptical Inquirer*, 9, 357–362.
- Lange, R. (1999). The role of fear in delusions of the paranormal. *Journal of Nervous & Mental Disease*, 187, 159–166.
- Maione, I. (1998). Testing Put to the Test. *Skeptical Inquirer*, 22(3), 21–22.
- Maller, J.B., & Lundeen, G.E. (1932). Sources of superstitious beliefs. *Journal of Education Research*, 26, 321–343.
- Morgan, R.K., & Morgan, D.L. (1998). Critical thinking and belief in the paranormal. *College Student Journal*, 32, 135–139.
- National Television Violence Study, Volume 1. (1997). Thousand Oaks, CA: Sage Publications.
- Ogles, R.M. (1987). Cultivation analysis: Theory, methodology, and current research on television-influenced constructions of social reality. *Mass Comm Review*, 14, 43–53.
- Ogles, R.M., & Hoffner, C. (1987). Film violence and perceptions of crime: The cultivation effect. In M.L. McLaughlin (Ed.), *Communication yearbook 10* (pp. 384–394). Newbury Park, CA: Sage.
- Potter, W.J. (1986). Perceived reality and the cultivation hypothesis. *Journal of Broadcasting & Electronic Media*, 30, 159–174.
- Potter, W.J. (1988). Perceived reality in television effects research. *Journal of Broadcasting & Electronic Media*, 32, 23–41.
- Potter, W.J. (1994). Cultivation theory and research: A methodological critique. *Journalism Monographs*, 147, 1–34.
- Randi, J. (April 13, 1992). Help stamp out absurd beliefs. *Time*, 80.
- Regan, D. (1988). *For the record*. New York: Harcourt Brace Jovanovich.
- Schwartz, M. (1982). Repetition and the rated truth value of statements. *American Journal of Psychology*, 95, 393–407.
- Shrum, L.J. (1996). Psychological processes underlying cultivation effects: Further tests of construct accessibility. *Human Communication Research*, 22, 482–509.
- Sparks, G.G. (1998). Paranormal depictions in the media: How do they affect what people believe. *Skeptical Inquirer*, 22, 35–39.
- Sparks, G.G., Hansen, T., & Shah, R. (1994). Do televised depictions of paranormal events influence viewers' paranormal beliefs? *Skeptical Inquirer*, 18, 386–395.
- Sparks, G.G., Nelson, C.L., & Campbell, R.G. (1997). The relationship between exposure to televised messages about paranormal phenomena and paranormal beliefs. *Journal of Broadcasting & Electronic Media*, 41, 345–359.
- Sparks, G.G., & Ogles, R.M. (1990). The difference between fear of victimization and the probability of being victimized: Implications for cultivation. *Journal of Broadcasting & Electronic Media*, 34, 351–358.
- Sparks, G.G., & Pellechia, M. (1997). The effect of news stories about UFOs on readers' UFO beliefs: The role of confirming or disconfirming testimony from a scientist. *Communication Reports*, 10, 165–172.
- Sparks, G.G., Pellechia, M., & Irvine, C. (1998). Does television news about UFOs affect viewers' UFO beliefs?: An experimental investigation. *Communication Quarterly*, 46, 284–294.
- Sparks, G.G., Sparks, C.W., & Gray, K. (1995). Media impact on fright reactions and belief in UFOs: The potential role of mental imagery. *Communication Research*, 22, 3–23.
- Thalbourne, M.A. (1994). Belief in the paranormal and its relationship to schizophrenia-relevant measures: A confirmatory study. *British Journal of Clinical Psychology*, 33, 78–80.
- Tobacyk, J., & Milford, G. (1983). Belief in paranormal phenomena: Assessment instrument development and implications for personality functioning. *Journal of Personality and Social Psychology*, 44, 1029–1037.
- Tversky, A., & Kahneman, D. (1973). Availability: A heuristic for judging frequency and probability. *Cognitive Psychology*, 5, 207–232.
- Williams, R.N., Taylor, C.B., & Hintze, W.J. (1989). The influence of religious orientation on belief in science, religion and the paranormal. *Journal of Personality and Theology*, 17, 352–359.
- Wolfradt, U. (1997). Dissociative experiences, trait anxiety and paranormal beliefs. *Personality and Individual Differences*, 23, 15–19.
- Zaragoza, M.S., & Mitchell, K.J. (1996). Repeated exposure to suggestion and the creation of false memories. *Psychological Science*, 7, 294–300.

Received: July 19, 2000

Accepted: December 20, 2000