

## Seeing Rare Things with the Mind's Eye—Visual Imagery Vividness and Paranormal/Anomalous Experiences

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**Abstract:** Mental imagery is a perception-like experience in the absence of the appropriate sensory input involving sight, sound, smell, taste, and tactile images. Some scientific research has been conducted to investigate the possible relationships between paranormal experiences and visual imagery. In the present study, paranormal/anomalous experience, and the capacity for visual imagery under open- and closed-eyes conditions, were assessed. It is hypothesized that visual imagery and paranormal/anomalous experiences are correlated. Participants were 348 well-educated believers in psi, interested in paranormal topics. They completed the *Vividness of Visual Imagery Questionnaire-Revised* (VVIQ-R) and a 10-item self-report inventory designed to collect information on spontaneous paranormal/anomalous experiences. The results showed that visual imagery and paranormal/anomalous experiences correlated significantly, especially for Aura, Remote Healing, and Apparitions, but only in the Open-Eyes condition, with the Closed-Eyes condition performing relatively poorly. These results and advantages of the VVIQ-R are discussed.

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**Keywords:** anomalous experience, closed/open eyes, mental imagery, paranormal beliefs, paranormal experience, visual imagery.

### INTRODUCTION

Mental imagery is defined as a “*perception-like experience in the absence of the appropriate sensory input*” (Kosslyn, 1999, cited in Vellera & Gavard-Perret, 2012, p. 4). Given its proximity with perception, mental imagery is a sensory experience involving sight, sound, smell, taste, and tactile images (Betts, 1909). Vellera and Gavart-Perret (2012) suggest three distinct ways mental imagery manifests: the first one concerns the imagery process, the “*process by which sensory information is represented in*

*working memory*” (MacInnis & Price, 1987, cited in Vellera & Gavard-Perret, 2012 p. 3); the second one suggested by Holt (1964) in which imagery is “*a faint subjective representation of a sensation or perception without an adequate sensory input*” (Vellera & Gavard-Perret, 2012, p. 3), and the third one refers to “individual differences in imagery processing abilities” (p. 3). A number of authors have discussed the neuropsychological mechanism of imagery, and the processes involved in generating images that have no physical representations (see Bartolomeo, 2002; Kaski, 2002; Kerr, 2000).

### *Imagery and Paranormal/Anomalous Experiences*

Over the past century, a large amount of scientific research has been conducted that is relevant to the possible relationships between psi phenomena and mental imagery. In addition, these experiences could have involved some type of mental-imagery/quasi-sensory experiences of which we are consciously aware, and which exist in the “absence of those stimulus conditions that are known to produce their genuine sensory or perceptual counterparts” (Richardson, 1994, p. 2).

Few studies have looked at the relationship between visual imagery ability and paranormal experiences, although some investigators have examined the relationship between individual differences in imagery and paranormal experiences. Diamond and Taft (1975) found that paranormal beliefs and mystical experiences correlated with imagery as assessed by Betts’ (1909) *Questionnaire Upon Mental Imagery* and they regarded peak experiences and belief in the supernatural as “hypnotic specific attitudes” (p. 135).

Irwin (1979) differentiated Australian college students’ spontaneous extrasensory experiences as either predominantly visual or intuitive. Irwin found that individuals whose spontaneous extrasensory experiences were predominantly visual, habitually tended to rely more on visual, than on verbal coding in normal cognitive tasks.

A novel approach to studying mental imagery and psi phenomena was taken by Wilson and Barber (1983) in their intensive study of individuals who experience eidetic imagery, which is defined as “a material picture in the mind which can be scanned by the person as he would scan a real current event in his [sic] environment” (Klüver, 1932, p. 181; see also, Richardson, 1969). In comparison with control subjects, not only did ‘eidetic types’ make better hypnotic subjects, they were more engaged in fantasy both as children and adults, and claimed to have more clairvoyant, precognitive, and telepathic experiences. In addition, they reported more

out-of-body experiences, lucid dreams, experiencing of “auras” and “apparitions,” and religious visions.

However, studies relating imagery with paranormal/anomalous experiences have not always yielded positive results. Spanos et al. (1993) did not find significant correlations between UFO sightings and imagery vividness, as measured by the Betts (1909) Questionnaire. But Cook and Irwin (1983) argued that imagery questionnaires could not adequately assess a respondent’s ability “to function imaginally in relation to the three dimensions of space” (p. 27). Thus, in their study Cook and Irwin included measures of both visual imagery performance and controllability of imagery (tested on Richardson’s, 1977, *Necker Cube Fluctuations task* [NCF]), and a Spatial Ability test, on 12 OBEers and a control group. Cook and Irwin observed that “the NCF data revealed no significant tendency for [OBE] experiencers to possess higher imagery control than nonexperiencers . . . [but] there is evidence that experiencers do have superior spatial abilities” (p. 30). Thus, they concluded that it is not the capacity for visual imagery, two or three dimensional *per se*, but it is the ability to transform “certain visuospatial information so as to create a novel perspective” (p. 52) that differentiates the OBEers from the non-OBEers. They noted that their finding is consistent with Blackmore’s (1983) observation that “the realism of the OBE’s perceptual-like content [is related] to visuospatial processes in imagery” (p. 32) and possibly to the ability to switch viewpoints in remembered scenes.

While Cook and Irwin (1983) found OBEers to be relatively adept in a performance task requiring judgment of how an object would appear from various perspectives, Irwin (1985a) reported that kinesthetic and somaesthetic imagery skills correlate with the experiencer’s impression of control over the OBE. This finding suggests that in order for the exteriorized self seemingly to do one thing while the physical body is doing another, some skill in somatic imagery is necessary.

Blackmore (1986) asked the question “*Does anything leave the body in an out-of-body experience (OBE) or does it just seem that way?*” (p. 108). In answering this question Blackmore takes the viewpoint that “[e]verything seems real but from different viewpoints . . . the OBE is a convincing illusion of reality. The only thing which has moved is the viewpoint” (p. 108). Blackmore tested 135 participants and asked them to image the room they were sitting in:

. . . from four or five different locations (from eye level in the doorway, from by the ceiling above their own head, from by their feet, and from eye level inside the room) and to rate their image on a scale of 1 (no image) to 7 (clear and detailed image). Subjects also rated on a 1 to 7 scale how easily they were able to switch their

perspective from their normal “center of awareness” to above their head and back, and to their feet when instructed to do so. (Kumar & Pekala, 2001, p. 265)

Blackmore (1986) found no association between having OBEs and lucid dreaming. OBEers self-reported that their images were clearer and more detailed than non-OBEers.

The largest difference between OBEers and non-OBEers occurred in their ability to imagine the room from a position on the ceiling above their own heads. Furthermore, OBEers were significantly better at switching from one viewpoint to another or from the normal position to one above the head in their imagination. (Kumar & Pekala, 2001, p. 265)

Blackmore (1986) concluded that her findings “do not answer the implicit question of whether anything leaves the body in OBE, but they at least provide some support for a theory that suggests it does not” (p. 111). Generally speaking, however, we must recall that OBE experiencers and nonexperiencers have not been found to differ on questionnaire measures of imagery skills (Cook & Irwin, 1983; Irwin, 1985a).

Storm and Rock (2009b) proposed an “imagery cultivation model” based on anthropological and parapsychological claims concerning alleged psi effects during shamanic practices: “Imagery cultivation is associated with shamanic states during which state the percipient actively propagates or cultivates psi-related images” (p. 165; see Storm & Rock, 2009a, for theoretical details). Participants were randomly assigned to one of two conditions: (1) a control condition consisting of sitting quietly with eyes open; or (2) a treatment condition that involved shamanic-like journeying instructions followed by 15 minutes of monotonous drumming. Participants were required to describe verbally, and then rank a randomly-selected concealed line-drawing, which they held throughout the condition. In support of their model, Storm and Rock (2009) found that the number of direct hits (34.5% where 25% was expected by chance) in the shamanic-like condition was significantly above chance, but the hit rate for control-condition participants was below chance. In their follow-up study, Rock, Storm, Harris, and Friedman (2012), evaluated which component of the shamanic-like journeying stimulus used by Storm and Rock (2009) was psi-conducive under four conditions: (a) instructions + drumming; (b) instructions only; (c) drumming only; and (d) control condition (i.e., no instructions, no drumming), by ranking randomly-selected targets (concealed line-drawings) derived from participants’ ratings of their mentations. Hit rates on targets were above chance (not significantly) in all

three treatment conditions, but below chance in the control condition. These results suggest that imagery formation has a strong link to psi-target identification (i.e., paranormal experience).

More recently, Parra (2011) examined believers in the paranormal in terms of the intensity of auditory, visual and tactile imagery, as well as three factors of proneness to schizotypy using the Betts' (1909) Vivid Imagery Scale, Barrett's Hallucinations Questionnaire (Barrett & Etheridge, 1992), and the Schizotypal Personality Questionnaire (Raine & Benishay, 1995). Parra's results revealed greater intensity of visual, auditory and tactile imagery by hallucinators as compared to non-hallucinators among believers in the paranormal, but no greater proneness to hallucinate. However, the visual, auditory and tactile hallucinators scored higher than non-hallucinators on the cognitive-perceptual factor, which also appeared as the best discriminator of visual, auditory and tactile hallucinatory modalities.

Parra (2013) also examined people in Argentina who claimed to have had various kinds of premonition experiences. He found that the majority of premonitory dreamers reported that their premonitions were vivid, clear, and emotionally intense, and their premonitory dreams were reported to be clearer than usual dreams.

In some extrasensory experiences, information is seemingly acquired by way of a clear, realistic mental image. This type of experience usually takes the form of a dream that is later confirmed. L. E. Rhine (1981) therefore termed such experiences 'realistic dreams', though the terminology is not entirely adequate given that the category is intended to accommodate instances of waking imagery (e.g., 'visions'). Unlike the hallucinatory experience, this imagery is not projected onto the environment in a pseudo-sensory fashion; rather, the experient claims the experience had no sensory foundation and was purely 'in the mind's eye'. The informational content of realistic dream cases may be highly detailed.

According to Bertolo (2005) the difficulty in studying visual imagery resides in the fact that there is "little objectivity" involved in "evaluating its processes. . . . The visual imagery experience, unlike memory, language and motor control studies, is personal and difficult to access" (p. 174; see also, Kosslyn, Ganis, & Thompson, 2001). Furthermore, although there is much research concerning the relationship between sensorial imagery and paranormal experiences, the theoretical question regarding the relative contributions of visual imagery to paranormal/anomalous experiences remains unanswered. Empirical research indicates that numerous factors impinge in some—maybe not all—paranormal experiences.

In the present study, visual imagery under closed-eyes and open-eyes conditions, and paranormal/anomalous experience, will be examined. First, it is hypothesized that, under both conditions, visual imagery and paranormal/anomalous experiences are positively related (i.e.,

paranormal/anomalous experiences correlate positively with visual imagery scores). Second, it is hypothesized that the closed-eyes condition and open-eyes condition produce different levels of paranormal/anomalous experiences.

## METHOD

### *Participants*

The participants were 381 in total, of which 348 (91%) completed usable questionnaires: 254 (73%) females and 94 (27%) males, ranging in age from 17 to 72 years ( $M = 45$  years old,  $SD = 13$  years). Participants were considered well-educated generally (based on the fact that 92% had completed high school, and a proportion of these attended college or university); and they could be considered 'believers in psi' because a high proportion of them were engaged in paranormal and/or New Age pursuits. The sample came from a group of psi-believing individuals recruited to participate in ESP testing at the Instituto de Psicología Paranormal, Buenos Aires, Argentina.

Recruitment was through the Institute's e-mail mailing list of students interested in paranormal and New Age topics. An announcement was also placed on the Institute's website ([www.alipsi.com.ar](http://www.alipsi.com.ar)). Participation was voluntary, and students received no pay. (These participants, as psi-believing individuals, were also recruited for ESP testing at the Institute. Although psi scoring was at mean chance expectation, the author intends to evaluate the data for a separate paper.)

### *Questionnaires*

*Vividness of Visual Imagery Questionnaire—Revised* [Spanish Version] (VVIQ-2, Marks, 1995), consisting of a 32-item questionnaire referring to different situations where participants had to visualize and score their imagery vividness 'open-eyed', and to visualize and score the same percept 'closed-eyes' (i.e., "The exact contour of face, head, shoulders and body" or "Characteristic poses of head, attitudes of body, etc.") on a five-point scale: '1' = *Perfectly clear and as vivid as normal vision*; '2' = *Clear and reasonably vivid*; '3' = *Moderately clear and vivid*; '4' = *Vague and dim*; and '5' = *No image at all*. Both scores (closed- and open-eyes) yield an average score (Campos & Pérez-Fabello, 2009).

*Self-Report Inventory* (Parra, 2006, 2010a, 2010b) consisting of 10 items designed to gather information on spontaneous paranormal/anomalous

experiences, such as ESP dreams, telepathy, aura, out-of-body experiences, past lives, recall sense of presence, remote healing, déjà-vu, mystical experience, and apparitions. Each item has a Likert scale: '0' = *Never*, '1' = *One time*; '2' = *Seldom*; and '3' = *Multiple times*. The internal reliability of this self-report inventory is high, with a Cronbach's alpha coefficient of .92, and test-retest reliability has also been found to be acceptable. An index, or count, of psi experiences ('Psi Index') for each subject based on range of "yes" responses to questions about having had paranormal experiences was constructed, and then used to correlate with the visual imagery. The index had a range from '0' = *no experience*, to '10' = *having reported all the experiences listed*.

### *Design*

The announcement for the study gave a brief explanation of the test procedure and encouraged people to have an interview with us in order to obtain more information. After receiving information in a cover letter about the aims of the study, each participant was asked to complete the scales voluntarily and anonymously. Returned questionnaires were stored unexamined throughout the recruitment and collection periods. Statistical analysis was not conducted in December 2013 until after the last completed questionnaire was returned. Data analysis was conducted using Spearman's *rho* tests. *SPSS 22* was used for data management and statistical analysis.

## RESULTS

Table 1 shows the percentages and number of cases of experiencers and non-experiencers for ten paranormal/anomalous experiences. For the 348 participants polled, more than half experienced, *at least sometime*, different types of paranormal/anomalous experiences, such as telepathy (82%), Déjà-vu (79%), Sense of Presence (77%), Remote healing (66%), and ESP dreams (64%) (see Table 1 for other findings).

The main hypothesis was that there are relationships between visual imagery and paranormal/anomalous experiences, so that visual imagery tends to increase with reported increases in paranormal/anomalous experiences. From Table 2 the negative correlations mean visual imagery tends to increase with reported increases in paranormal/anomalous experiences, due to the scoring protocol where '1' means *Perfectly clear and as vivid as normal vision* 'and '5' means *No image at all* (see the *Questionnaires* section above for details).

Table 1  
Number and Percentages of Paranormal/Anomalous Experiences\*

Experiences	Yes				Total (%)	No
	One time (%)	Seldom (%)	Multiple (%)	Total (%)		
1. ESP dreams	29 (8.3)	179 (51.4)	17 (4.9)	225 (64.7)	123 (35.3)	
2. Telepathy	54 (15.5)	210 (60.3)	23 (6.6)	287 (82.5)	61 (17.5)	
3. Perception of lights/energies	20 (5.7)	101 (29.0)	36 (10.3)	157 (45.1)	191 (54.9)	
4. Out-of-Body Experiences	7 (2.0)	101 (29.0)	53 (15.2)	161 (46.3)	187 (53.7)	
5. Past lives recall	40 (11.5)	121 (34.8)	24 (6.9)	185 (53.2)	163 (46.8)	
6. Sense of Presence	22 (6.3)	172 (49.4)	74 (21.3)	268 (77.0)	80 (23.0)	
7. Remote Healing (as healer)	26 (7.5)	154 (44.3)	51 (14.7)	231 (66.4)	117 (33.6)	
8. Déjà-vu	14 (4.0)	213 (61.2)	49 (14.1)	276 (79.3)	72 (20.7)	
9. Mystical experience	37 (10.6)	110 (31.6)	32 (9.2)	179 (51.4)	169 (48.6)	
10. Apparitions	25 (7.2)	77 (22.1)	19 (5.5)	121 (34.8)	227 (65.2)	

\* Results are presented in terms of number of cases and percentages (in parenthesis).



Table 2  
Correlation between Visual Imagery (Open- & Closed-Eyes) and Anomalous/Paranormal Experiences and Difference Between Open- & Closed-Eyes Correlations

Paranormal/Anomalous	$r_s$ (Open Eyes) <sup>a</sup>	$p$	$r_s$ (Closed Eyes) <sup>b</sup>	$p$	$z$	$p$
1. ESP dreams	-.08	.109	-.01	.935	.92	.17
2. Telepathy	-.13	.011	-.04	.408	1.19	.11
3. Aura	-.17*	.001	-.14	.010	.40	.34
4. Out-of-body experiences	-.10	.057	-.04	.455	.79	.21
5. Past lives recall	-.14*	.007	-.12	.025	.27	.39
6. Sense of presence	-.16*	.002	-.07	.163	1.20	.11
7. Remote healing	-.25*	<.001	-.16*	.002	1.23	.10
8. Džija-vu	-.06	.257	.01	.739	.66	.25
9. Mystical experience	-.16*	.002	-.10	.044	.08	.21
10. Apparitions	-.25*	<.001	-.20*	.001	.69	.24
Psi Index	-.24*	<.001	-.14*	.009	1.36	.08

Note: Negative correlations are due to scoring (1 to 5) where '1' means *Perfectly clear and as vivid as normal vision* and '5' means *No image at all* (see the *Questionnaires* section); <sup>a</sup> Open Eyes; Score Range = 16-80,  $M = 38.61$  ( $SD = 16.06$ ); <sup>b</sup> Close Eyes; Score Range 16-80,  $M = 38.61$  ( $SD = 15.0$ ); \*  $p$  values have been adjusted for multiple analysis (Bonferroni correction, cut-off point  $p = .003$ );  $df = 346$ .

While the Psi-Index correlation was significant for both conditions, in the Open-Eyes condition, 7 out of 11 correlations (64%) were significant after correction for multiple analysis, indicating strong support for the first hypothesis—in particular, for Aura, Past lives recall, Sense of presence, Remote healing, Mystical experience, and Apparitions (see Table 2 for details). However, in the Closed-Eyes condition, a mere 3 out of 11 (27%) correlations corrected for multiple analysis were significant (Remote healing, Apparitions only), thus giving some support for the hypothesis. Our second hypothesis is supported by the fact that the two conditions produce different outcomes.

## DISCUSSION

The number of significant correlations of visual imagery with paranormal/anomalous experiences was considerable, especially in the open-eyes condition, and two in particular were moderate in strength (Remote healing and Apparitions). Although all correlations were stronger in the eyes-open condition compared to the closed-eyes condition, tests on pairs of correlations yielded no differences between the two. Probably for experients in this study the closed/open eyes dichotomy is not a relevant condition for paranormal experiences, though it is not clear why this might be so. Although the above findings are significant at the 0.05 level, and a few were reduced to nonsignificance after Bonferroni correction, replication of the above findings is still required before we can be conclusive. Nevertheless, past findings are supportive—in Irwin's (1979) survey, for example, people in a variety of “normal” psychological tasks, adopting the style of a visualizer (as opposed to that of a verbalizer), usually have their ESP experiences by way of imagery rather than in the form of imageless intuitive impressions.

As well as the supportive studies we reviewed above (e.g., Storm & Rock, 2000a,b), we also mention George and Krippner (1984), who noted in their review of the literature that many traditions (e.g., shamanic, Buddhist, even popular occult) emphasize the importance of imagery in paranormal experiences. Additionally, investigators of spontaneous cases of individuals reporting paranormal experiences in different cultures (e.g., Green, 1960; Rhine 1981; Sannwald, 1959) have found evidence that imagery (particularly “visual” imagery more than other sensory modalities) often serves as an extrasensory-mediating vehicle. Diamond and Taft (1975) also found positive relationships between imagery and paranormal beliefs and mystical experiences. People who reported spontaneous or aura energies might tend to have a higher level of imaginative/fantasy activity, and both variables could interact with the visual imagery.

Parra (2010a) found that those who reported aura experiences scored higher than nonexperiencers on visual and tactile imagery. Also, Irwin (1985b) indicated that visual imagery skills make a substantial contribution to the apparitional experience. Becker (1992), and Grey (1960), observed further that apparitions (as well as OBEs) seem to be shorter than hallucinations in terms of the continuity of the experience, which may recur for hours, although hallucinations tend to persist regardless of whether the eyes are open or closed. We may wonder if there is some connection between hallucinations and paranormal/anomalous experiences when eyes are opened. Some reports on apparitions showed they cannot be seen with the eyes closed, whereas OBEs tend to terminate when the eyes are opened (Grey, 1960). Our results show that paranormal believers (whatever their domain of experience, whether they are claimed psychics or not) have a high capacity for mental imagery. These results have important implications for parapsychological research. We must note, however, that the sample came from a group of psi-believing individuals recruited to participate in ESP testing at the Instituto de Psicología Paranormal, and were not recruited merely to test relationships between visual imagery and a number of paranormal experiences.

These results also highlight the fact that mental imagery ability may be psi-conducive, and it is interesting to note that the VVIQ may be helpful in identifying and selecting better psi-scorers in psi experiments, and may even be of use in psychomanteum and aura-seeing research. The other advantage of the VVIQ is its ease of administration and speed of data analysis.

The present study also shows that it may be wise to stimulate mental imagery in individuals who participate in psi experiments—for instance, by way of mental imagery instructions. However, it would be important to examine the robustness of our findings on other samples and on other groups of participants (e.g., participants who do not claim to have paranormal/anomalous experiences so that they may serve as controls). It may also be of interest to examine the effects of the variables on creative individuals.

The present study focused on vividness of visual imagery. It did not examine the ability of subjects to control that imagery. In future studies, use of the Gordon's Test of Imagery Control (Gordon, 1949; McKelvie, 1992) might be helpful. Another limitation is that we considered only the visual modality of mental imagery (i.e., visual imagery). Since mental imagery is not only visual, it may prove important to identify the role of other sorts of mental imagery such as auditory, kinaesthetic, and gustatory/olfactory images, to name but a few, and test the specific relationships these have with anomalous/paranormal experiences.

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