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# The Feeling of Being Stared at: A Parapsychological Classic with a Facelift

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## Abstract

*Findings in parapsychology suggest an effect of distant intentionality related to remote staring. Previously, either the covariation of a distant gaze with the electrodermal activity (EDA) of the person being observed (staree) or with the person's conscious guesses are measured. We combined these two strands of research. Thereby we allowed for the starees at any time to indicate whether they felt being stared at or not. We distracted the starers by a demanding mental task in half of the sessions or we instructed them to keep their minds busy with anything but the staree. Overall 50 sessions were conducted. The experiment failed to demonstrate a clear cut effect. The difference between the staring and non-staring conditions was not significant. For the comparison of distraction and standard procedures we found no significant differences for EDA or conscious report. However in a post hoc analysis one of the conscious report variables approached significance for the interaction between staring and distraction in the predicted direction. The effect size of the staring effect in this condition was  $d = 0.57$ . We conclude that the starer's mental strategy during the non-staring periods may be important.*

## Introduction

The era of examining the “everyday phenomenon” of feeling unseen gazes in a laboratory setting has a long history and can be differentiated in two main paradigms.

In the first kind of experiments participants are gazed at by another person either sitting directly behind them, or through a one-way mirror. Alternatively a closed circuit television system can be used. A randomized series of trials is then conducted, alternating staring and non-staring conditions. After each trial the starees have to make guesses if they have just been gazed at or not (Titchener, 1898; Coover, 1913; Poortman, 1959; Williams, 1983; Sheldrake, 1998, 2001). Most of these studies were quite informal and hardly shielded against sensory cueing.

A radical change in methodology began with the studies of William Braud in the early 1990s. Braud and his colleagues pointed out that the effect sizes of the former studies were not very impressive and that stronger effects could be obtained if the relatively “unconscious” autonomic nervous system activity were to be used as the indicator of staring detection, rather than conscious guessing “...because ... autonomic reactions might be less distorted by higher cognitive processes and therefore might provide a purer and more sensitive indicator” (1993b, p. 392). From the late 1970s until the early 1990s a series of 37 so called DMILS (“direct mental interactions with living systems”) studies was conducted in the laboratories of the Mind Science Foundation in San Antonio (Schlitz & Braud, 1997). In DMILS research an individual (*agent*) tries by means of mental intention and volition to interact with the behavioural or psychophysiological response of another, sensory isolated living target system (*receiver*). The most frequent response system that is studied in DMILS research is the electrodermal activity (EDA) of the receiver which the agent attempts to calm or activate during an experimental session. A typical DMILS session consists of 10 randomized and counterbalanced “activate” periods, 10 “calm” periods (and 20 “rest” periods in between). Under

the null hypothesis there is no difference to be expected between the receivers' EDA arousal during the calm or activate periods.

In the first "remote staring" DMILS studies that Braud and colleagues conducted (Braud, Shafer & Andrews, 1993a, 1993b), the paradigm of former DMILS-studies was combined with a quite simple design to test if people were able to detect when they are gazed at by a sender in a distant room. An experimental staring session usually consists of two periods in random sequence: during a staring period the starrer (*agent* or *sender*) is told to look intently at the real-time image (on a monitor or screen) of the staree (*receiver*) which is transmitted to him by a closed-circuit television system. The starers' experimental task thereby is to either observe the starees or not, and during the control periods, to just turn away from the monitor and to keep their mind busy with something else.

Altogether the four series of remote-staring experiments conducted by Braud and colleagues revealed significant results. The starees' EDA was significantly more activated during the staring periods compared to their EDA level during the non-staring periods.

Most of the experiments that followed the same paradigm (Schlitz & LaBerge, 1997; Wiseman & Schlitz, 1997, 1999; Wiseman & Smith, 1994; Wiseman, Smith, Freedman, Wasserman & Hurst, 1995) also revealed significant results and in a meta-analysis on all EDA staring studies we could find a small but significant effect size ( $d = .13$   $p = .01$ ,  $k = 15$  studies,  $N = 379$  sessions; Schmidt, Schneider, Utts & Walach, 2004).

However, the way the EDA was measured showed some shortcomings and thus leaves some doubt about the validity of the results. Therefore we evaluated the EDA methodology of all published EDA-DMILS and Remote Staring studies and compared them with a sample of studies published in leading psychophysiological journals (Schmidt & Walach, 2000). The results of this evaluation indicated that the EDA methodology applied by parapsychologists did not compare to state-of-the-art EDA measurement recommended by psychophysiologicals (Boucsein, 1992; Venables & Christie, 1980). None of the studies complied with the "Publication Recommendations for

Electrodermal Measurements” issued by leading psychophysiologicalists in 1981 (Fowles et al., 1981), and most of them even violated common psychophysiological knowledge.

In comparison the more recent studies conducted and promoted by Rupert Sheldrake, follow the older paradigm that takes the conscious report of the staree as the outcome-variable. Sheldrake conducts or supervises big series of experiments mostly in schools that can always prove overall positive results with extremely high significances: while the responses at staring trials are constantly above chance they are around chance at non-staring trials (e.g. Sheldrake, 1998, 1999, 2000, 2003, 2005, 2008). Nevertheless there are still a lot of controversies concerning the methodology as well as the statistical analysis of these experiments (Colwell et al, 2000; Schmidt, 2003, 2005).

So far a direct comparison between these two paradigms, which are also termed *EDA-CCTV* and *Direct Looking* (Baker, 2005) by assessing concurrently the starees’ EDA *and* the conscious guessing has taken place in only one study (i.e., Lobach & Bierman, 2004). In this experiment the autonomic responses measured by EDA for detecting a possible staring effect just reached significance while at the same time the conscious guesses did not differ meaningfully from chance expectations. In real life however many people claim to detect and become aware if someone is staring at them unseen from behind. Thus evidence for this effect should be revealed by an experimental setting taking conscious guessing into account. By measuring nervous processes and comparing them with the conscious guessing it may be possible to find results about their interactions and the possible correlation of this interaction with other variables (i.e., personality, belief in Psi, mood) preconditioned that such an effect exists at all.

In the present remote staring study we combined both aforementioned paradigms by assessing concurrently the starees’ autonomic reaction (EDA) and their conscious guessing. So far conscious reports in staring experiments were received by a forced-choice procedure where “...the receiver must engage in overt cognitive processing to provide a response to the target” (Delanoy, 2001, p. 35), which in this case is either “yes” or “no”. But this procedure is rather

different from a daily life experience and may elicit a lot of different processes – e.g. guessing strategies, response biases or intellectual analyzing – that obscure experimental outcomes. Therefore we replaced the forced choice situation by an open response procedure. Participants were not prompted to give an answer but could indicate at any time during the session if they had feelings of being stared at or not by either pressing or releasing a switch. Of course they were blinded against the number of staring vs. non-staring epochs, their length or their starting point.

Moreover we introduced a new procedure concerning the “starers”. In former studies they were asked to maximize their attention to the starees during staring periods and to think about something else during non-staring periods. Based on the “white bear” studies by Daniel Wegner and colleagues’ that dealt with the well-known daily life phenomenon of the impossible task to suppress unwanted thoughts (e.g. Wegner et al, 1987, 1990, Abramovitz, 2001) it can be assumed that the effectiveness of the explicit instruction “not to think about the staree” given by default for the non-staring condition is questionable: “...during stare trials, the experimenter quietly directed his/her attention toward the receiver, *during non-stare trials the experimenter quietly directed this attention away from the receiver.*” (Wiseman & Schlitz, 1997; p. 202).

Instead of “thinking about anything else” the starees’ image could very easily come back unintentionally to the starers’ mind. So if the remote staring effect – mediated by focused intention / attention as instructed – is genuine it should be detected in an experimental setting by contrasting experimental (staring) and control condition (non-staring) adequately. In order to do so we induced the attention component by instructing the starers *to focus intensely* on the starees’ video-feed during the staring-condition and occupied them with a demanding computer game throughout the non-staring periods in half of the experimental sessions. To see if this new procedure would make any difference a comparison was made in a between subject design with the other half of the sessions run in the usual fashion (see above) of the standard paradigm.

## Method

### *Design*

The design was a (2 × 2) mixed design with both between- and within-group manipulations. *Condition* (2 levels, distraction – no-distraction) was the between-subjects variable while *Instruction* (2 levels, staring – non-staring) was the within-subjects variable.

### *Participants (starees/starers)*

Fifty volunteers, 26 women and 24 men, aged 20 – 57 years (Mean = 32.5), participated as starees and were recruited through leaflets. The motivation for participating was interest in the staring effect and thus the sample was self-selected. Participants were reimbursed with 10 Euros.

Each experimental session was conducted individually by one of two persons (one woman and one man) each of whom were acting at the same time as experimenter and starer for 25 experimental sessions. The female experimenter tested 11 men and 13 women while the male experimenter tested 13 men and 13 women respectively. Both experimenters were student assistants hired for this experiment and both were extensively trained throughout a preceding pilot study. The experiment was organized and conducted by the first author.

### *Setting*

All experimental sessions were conducted in a two-floor-building with starer and staree being located in two entirely separated rooms in different wings (see Figure 1). The lab (starees' room) was located on the ground floor and the starers' room on the first floor approximately 20 metres apart. The physical separation of these rooms together with the standard use of a closed-circuit television system minimized the possibility of any sensory leakage between starer and staree.

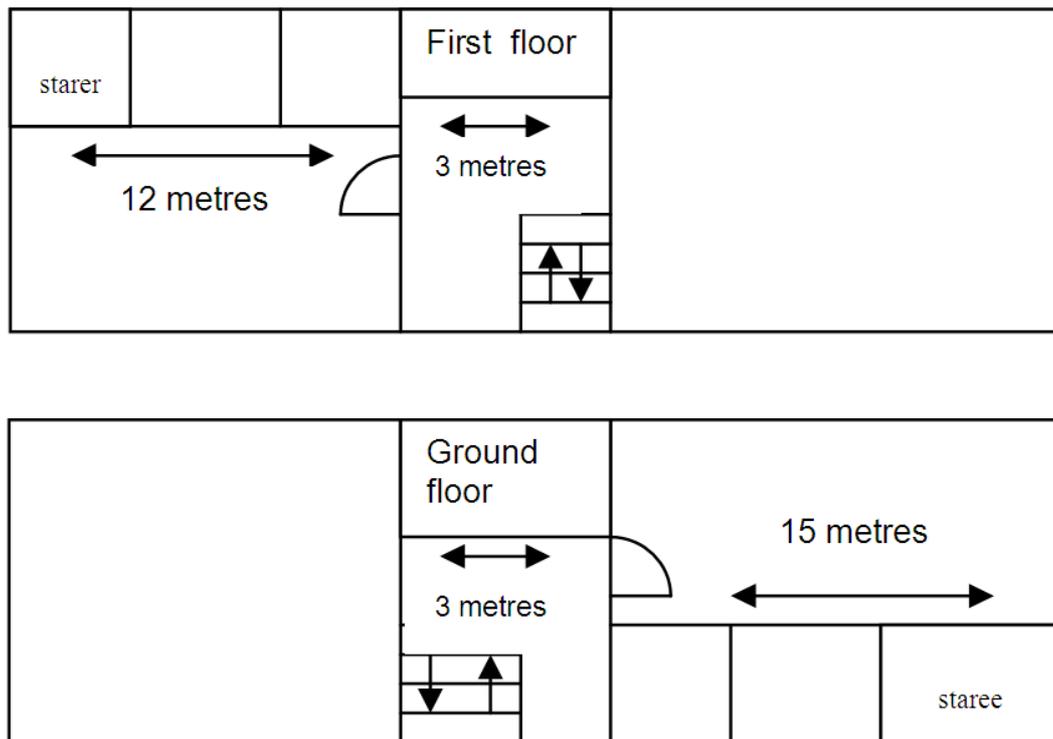


Figure 1. Plan of the location where the experiment took place

### *Materials*

**Video equipment:** An Axis Netcam206 video camera was positioned at the left side of the staree about 45 degrees of centre at eye level (see Braud et al., 1993a). Thus real-time images of the staree's shoulders, neck and head were continuously transmitted to a 19" monitor in the starrer's room. The camera continued recording even when the starrer was not provided with the image in the no-stare condition. This one-way closed circuit television system allowed the starrer to see the staree but not the other way round.

**EDA measurement:** The staree's electrodermal activity was assessed by measuring and recording skin conductance (SC) with a constant voltage method (0.5 V) according to the guidelines by the Society for Psychophysiological Research (Fowles, Christie, et al. 1981; Schmidt & Walach, 2000). A skin conductance device split the data into two channels: the tonic level of skin conductance referred to as the skin conductance level (SCL) and the phasic signal – superimposed on the

tonic level – referred to as the skin conductance response (SCR). The latter one is elicited by the presentation of unknown, novel or unexpected – but clearly identifiable – stimuli. SCRs that happen without the presence of such stimuli inputs are the so called spontaneous or non-specified SCRs (NS.SCRs) (Dawson et al., 2000).

As there were no specific stimuli and we were interested in the participants' arousal during different epochs, only tonic parameters (i.e., SCL, frequency of NS.SCRs, *NS.SCRfreq* and the sum of all amplitudes of NS.SCRs) were the interesting variables in our study (see also Schmidt & Walach, 2000). We calculated all three tonic parameters and combined them in one multivariate analysis of variance (MANOVA).

SCR was derived by treating the SCL with a time constant of 10s. Data was digitized (12-bit) and sampled at 20 Hz for each channel. Skin conductance was measured with two 8mm Ag/AgCL electrodes placed on the thenar and hypothenar eminences of the non-dominant hand. An isotonic electrode gel was applied and a time lag of at least 20 minutes between electrode application and start of measurement was maintained to allow for skin adaptation processes.

Respiration was recorded by a piezo based respiration belt placed on the upper abdomen and also stored in a separate channel.

**Measurement of the starees' conscious guesses:** For recording the starees' report of feeling to be stared at or not they were provided with a tiny switch on their dominant hand. Depending on their guessing they were told to push this switch either into the (feeling of being) "stared-at position" or release it to the (feeling of being) "not-stared-at position". The signal generated by the switch presses of the participant was recorded together with the EDA raw data in a separate channel.

**Questionnaires:** In order to explore possible interrelationships between personality characteristics as well as the subjects' present mood or well-being with the autonomic staring detection effect the following scales were applied:

*Belief-in-Psi:* Three questions equal to the ones that Wiseman and Schlitz used in their study (Wiseman & Schlitz, 1997). The questions

assessed the participants' attitudes toward Psi. They had to indicate their responses on a seven-point scale ranging from -3 to +3. A general "belief-in-Psi" score is obtained by summing the responses over all three questions: (i) Are you convinced about the existence of Psi? (*certain to not at all*); (ii) What best describes your own Psi ability? (*I have Psi ability to I have no Psi ability*); (iii) Do you believe you might be able to demonstrate any Psi ability in this experiment? (*Yes to No*). Each staree had to answer these questions before the experimental session.

*Mindfulness*: (Freiburg Mindfulness Inventory; FMI): Participants were asked to fill in the 14 item short form of the Freiburg Mindfulness Inventory (FMI) (Walach, Buchheld, Buttenmüller, Kleinknecht & Schmidt, 2006). This includes, apart from awareness for the environment, also the awareness of one's own mental processes, emotions and signals from the body. The short form of this questionnaire can be filled out by persons who are not familiar with the mindfulness concept itself. The rationale for measuring mindfulness in participants was to find out (i) for the staree: how the ability to be continuously aware of the present moment is related to the detection of a remote stare observation; (ii) for the starrer: to find out whether the ability to be aware of the present moment is related to a better performance. Mindfulness, intention and attention share aspects that are likely to be important for these kinds of intention experiments. The two starrers had to fill out this questionnaire once at the beginning of the study and the starees had to fill out this questionnaire before their particular experimental session.

*Well-being*: (German: "*Befindlichkeitsskala*"; Bf-s): General well-being was measured by the Bf-s (Zerssen, 1976), an adjective list which measures general well-being in 28 pairs of adjectives with opposite semantic content arranged in a semantic differential. This instrument is a widely used, psychometrically sound scale for measuring short term changes in well-being. Starrers and starees had to fill out this scale shortly before and directly after each session.

*Personality*: (NEO-FFI; Borkenau & Ostendorf, 1993) The German translation of the NEO-FFI is a 60 item personality inventory assessing the five standard traits: Neuroticism, Extraversion, Openness,

Conscientiousness and Agreeableness. High scorers report a receptivity to novel experiences and actions and a high frequency of, and interest in, imaginative and reflective thought.

**Distraction condition:** In half of the sessions (distraction condition) the starrer had to perform a demanding cognitive task during the non-staring epochs. In the other half of the sessions (standard condition) there was no such task and the starrer was just told not to think about the staree. The distraction task was displayed on the same screen where the video image of the staree was shown during staring epochs. It consisted of a matrix (10 × 10) of 100 two digit numbers. The task was to identify as fast as possible the presence of certain predefined numbers. Time pressure was heightened by a time bar and very short time intervals.

**Randomization:** The sequences of the experimental conditions were in a randomized order with the same number of staring and non-staring trials. They were balanced to avoid linear trends (such as a steady decrease in skin conductance or trends caused by shifts in the amplifier etc) potentially resulting in artefacts (see Schlitz et al., 2003). An algorithmic random process was employed to draw a sequence out of a pool of sequences fulfilling the above criteria. One epoch lasted 60 seconds. There were 10 staring and 10 non-staring epochs. Staring and non-staring epochs were interspersed by short rest intervals of variable length (5 to 15 seconds, randomly assigned). Thus the overall session length summed up to 23 to 30 minutes.

**Procedure:** Each experimental session was run individually by one of the two experimenters. After arriving at the laboratory participants were informed about the purpose of the experiment and gave their consent. Before the session started the starees had to fill out questionnaires on mood, personality, mindfulness and paranormal belief, and jewellery as well as mobile phones had to be removed. After taking seat in a comfortable chair the EDA electrodes and the respiration belt were attached. In order to eliminate any noises from outside which could influence the measurement of the EDA the starees

wore special headphones, which extremely attenuated sounds from the environment (Sennheiser HD 280 Pro). To make them relaxed and comfortable they additionally listened to a special music (Dr. Harold Moses – “The Drone”) which did not contain any sudden changes or beats so as to not interfere with the EDA measurement. Starees were blind against the number and the timing of the sequences. They were just told that the camera would be on throughout the whole experimental session and that the starrer would look intensively at their image revealed by the camera at randomly fixed times. Starees should press the switch they hold in their dominant hand each time they felt that the starrer would attempt to gain their attention by looking intently at their video-feed image (staring condition) and should release the switch when they felt that this attention had vanished (non-staring condition). Moreover they were told to sit quiet and relaxed and not to move unnecessarily. After having been instructed participants were left alone for five minutes in order to record their basal skin conductance (baseline). Afterwards the experimenter re-entered the lab, stored the baseline data and went to a room upstairs. Exactly six minutes after leaving the lab the experimenter started the computer program that ran the whole session. The program – written in VBA – sampled and stored the incoming data, selected the random sequence and controlled the monitor for the starrer by switching between the picture of the staree and a blank screen (standard or “no matrix” – condition) or the computer game (distraction or “matrix” – condition). Due to a randomized order the experimenters manually set up the program for either the standard or the distraction condition. The sequence of these two conditions throughout all the sessions was in a randomized order with the same number of sessions for both. Each of the experimenters had a package of sealed envelopes locked in a cabinet drawer. Before starting the program they chose the envelope labelled with the smallest number to find out about the ongoing condition. It is important to notice that both starers and starees were blind to the trial sequences. After the session was finished, the experimenters waited for five more minutes before entering the lab. Thereby a second EDA baseline could be recorded.

In a preceding pilot study with ten participants the laboratory set-up, the measurement devices and all procedures were tested in order to guarantee an ideal performance. All methodological details and statistical analyses of the main study were predefined in a protocol that was deposited with E. Bauer (IGPP, Freiburg/Germany) before the beginning of the main study.

**Hypotheses:** According to former studies we hypothesized a significant difference in the starees' electrodermal activity between staring and non-staring periods. Furthermore we expected the starees to press the switch for conscious guessing more often and for longer periods during staring trials than during non-staring trials. Concerning the two different assessments of the non-staring condition we hypothesized a significantly larger difference in the starees' electrodermal activity as well as a difference in the frequencies of pushing the switch between staring and non-staring trials throughout all the experimental sessions when the starrer was occupied by the mental task (distraction condition).

Furthermore correlations between well-being, paranormal belief, mindfulness and the outcome measures for the autonomic reaction as well as the conscious guesses were hypothesized.

### *Data Analyses*

**SCR-channel:** The data was first transformed into standardized measurement units ( $\mu$ Siemens) and then treated with a 0.5 Hz low-pass filter. Afterwards each of the twenty epochs was analyzed for the number of non-specific skin conductance responses (NS.SCR.frequencies) as well as for the sum of amplitudes of these responses (NS.SCR.amplitudes) with a special software (EDA-Para, Florian Schaefer, University of Wuppertal, Germany). The threshold for the identification of responses was 0.01  $\mu$ S (microsiemens). Thresholds used in different studies reach from 0.3  $\mu$ S (Fahrenberg & Foerster, 1982) down to 0.015  $\mu$ S (Clements & Turpin, 1995), with a majority of researchers using 0.05  $\mu$ S according to the experimental task.

Each of these parameters was added up separately for the two conditions (stare and non-stare) throughout all trials of one experimental session resulting into two pairs of values (consisting of the sums of staring and non-staring trials) for each session.

After being transformed to standardized measurement units ( $\mu\text{S}$ ) each of the 60 sec epochs was averaged. These mean values were averaged over all epochs of the same type (10  $\times$  staring and 10  $\times$  non-staring). Thus each session resulted in one pair of values (consisting of the mean value of the staring and the mean value for the non-staring epochs).

**Respiratory activity:** Respiratory activity was recorded in order to control the EDA data for artefacts. The decision for not analyzing it within the scope of the present study was made in advance. However the data is available for later analyses.

**Conscious guessing:** Changes in the switch position were also analyzed per epoch and then summed up over all trials for each of the two conditions. Two variables were extracted from this data: (i) number of times the switch was moved from the “not stared at” to the “stared at” position. (ii) percentage of samples within a trial where the switch was in the “stared at” position (with 100% indication all the time and 0% indicating never).

#### *Criteria for exclusion of data*

In our protocol we prespecified a set of exclusion criteria for the EDA data in order to exclude SCR non-responders from the analysis. It is known from the literature (e.g. Boucsein, 1992) that 10% to 15% of the general population lack the characteristic response patterns towards stimuli in their EDA. Since these participants would only add zero results to our database we excluded them. Specifically a dataset was excluded from analysis if: (i) mean SCL-value for more than four 60 second epochs was less than  $0.5 \mu\text{S}$ ; (ii) the complete dataset showed less than 10 NS.SCR  $> 0.01 \mu\text{S}$ ; (iii) one electrode was disconnected

during recording; (iv) the staree wanted to discontinue the experimental session; (v) anything else happened that could invalidate data recording.<sup>1</sup>

### Statistics

Two separate multivariate repeated measurement analyses of variances (MANOVA) were calculated. One for all three EDA variables and one for the two conscious response variables. The within subject factor (repeated measurement) was *staring vs. non-staring*, the between subjects factor *distraction vs. no distraction*. All data were analysed with SPSS for Windows.

## Results

### Unconscious Response (EDA)

Table 1 contains the raw results for the three EDA variables broken down according to two factors.

Table 1. Means and standard deviations (in brackets) for the EDA variables, *number of non-specific skin conductance responses (NS.SCR)*, *sum of amplitudes of NS.SCR* and *skin conductance level (SCL)* for the two factors *staring vs. non-staring* (within-subject) and *distraction vs. no distraction* (between subject)

		Distraction ( <i>n</i> = 16)	No Distraction ( <i>n</i> = 19)	Total ( <i>n</i> = 35)
NS.SCR frequency	Staring	20.19 (10.03)	23.00 (14.84)	21.71 (12.77)
	Non-staring	18.06 (8.64)	24.32 (16.28)	21.46 (13.54)
Sum of amplitude ( $\mu$ S)	Staring	5.22 (4.76)	4.81 (3.76)	5.00 (4.19)
	Non-staring	4.74 (4.97)	5.06 (4.19)	4.91 (4.49)
SCL ( $\mu$ S)	Staring	3.87 (25.22)	3.78 (17.35)	3.82 (2.10)
	Non-staring	3.87 (25.74)	3.74 (17.36)	3.80 (2.13)

<sup>1</sup> Of the 50 participants only 35 fulfilled the inclusion criteria concerning the EDA data analysis. We had a prespecified sample size of 40 in our protocol. But as the study proceeded more slowly than expected and more participants than anticipated fulfilled the exclusion criteria we had to stop with 35 valid data sets only, as the experimenters were no longer available. This decision was taken without any inspection or analysis of the data and was motivated purely by pragmatic reasons.

The multivariate analysis of variance yielded no significant effects, neither for the between-subject nor the within-subject factor or their interaction. The results are displayed in table 2.

Table 2. Results of the multivariate analysis of variances for all three EDA variables

Factor	Wilks' Lambda	F	df	p	$\eta^2$
Stare	.957	0.470	3	.71	.04
Distraction	.954	0.502	3	.68	.05
Stare $\times$ Distraction	.923	0.867	3	.47	.08

### Conscious response

Out of our complete sample of 50 participants 7 never used the switch to signal whenever they felt stared at and thus only the remaining 43 data sets were analysed. Twenty of these participants were in the distraction condition and 23 were in the no distraction condition. Our main analysis counted how often the switch was pushed into the "stared at" position during staring and non-staring trials. On average, participants pushed the switch 9.9 times (*range* 1 – 37, *SD* = 7.6) during staring and non-staring trials. We also analysed the percentage of time during which the switch was kept in the "stared at" position by the participant. Overall participants had the switch 23.9% of the time in this position (*range* 0.4% – 60.3%, *SD* = 15.7). The results broken down according to the two factors can be found in table 3.

Table 3. Means and standard deviations (in brackets) for the two conscious report variables number of switch presses and percentage of time switch in on-position for the two factors staring vs. non-staring (within-subject) and distraction vs. no distraction (between subject).

		Distraction ( <i>n</i> = 20)	No Distraction ( <i>n</i> = 23)	Total ( <i>n</i> = 43)
Number of switch presses	Staring	4.55 (2.74)	4.35 (4.45)	4.44 (3.74)
	Non-staring	4.20 (3.68)	4.30 (4.47)	4.26 (4.07)
Switch in "on" position (%)	Staring	29.12 (17.79)	21.56 (15.76)	25.07 (16.97)
	Non-staring	23.09 (13.80)	22.52 (19.56)	22.79 (16.93)

The results of the according multivariate analysis of variance can be seen in table 4. No significant differences were found in this analysis. However in the univariate assessment for the variable *switch in the "on" position (%)* the interaction stare  $\times$  distraction approached the significance level ( $F = 3.371, df = 1, p = .07$ ). As one can see in table 3 the direction of this difference is in the hypothesized direction. During the distraction condition there is a difference of 6.03 (SD = 14.85) in the percentage of time button pressed between staring and non-staring. Also the button is in the "on" position for a longer time during the staring condition than during during the non-staring condition. At the same time this difference is only -0.96 (SD = 9.93) in the *no distraction* condition. A *post-hoc t-test* of the difference in an alleged staring effect between the distraction and and no-distraction condition reached significance ( $p = .04, t_{(41)} = 1.84, \text{one-tailed}$ ) and an according effect size<sup>2</sup> of Cohen's  $d = 0.57$ .

Table 4. Results of the multivariate analysis of variances for the two conscious report variables

Factor	Wilks' Lambda	F	df	p	$\eta^2$
Stare	.958	0.873	2	.43	.04
Distraction	.977	0.472	2	.63	.02
Stare $\times$ Distraction	.923	1.670	2	.20	.08

### Correlations between measures

In our analyses we found no correlations between well-being, paranormal belief, mindfulness and the outcome measures for the autonomic reaction as well as for the conscious guesses.

## Discussion

We carried out a remote staring experiment that tried to overcome some technical shortcomings of former studies and aimed at studying the "feeling of being stared at" with a sensitive state-of-the-art

<sup>2</sup> Calculated as  $d = \frac{2t}{\sqrt{df}}$

methodology grounded in sound psychological knowledge. Therefore we combined physiological measurement (EDA) and concurrently gave our participants the possibility for conscious guessing in an open response assessment. In order to follow the assumption that "...the quality of the starrer's attention is important in determining the nature of the experimental outcome" (Braud, 2001; p. 405), we implemented a new paradigm by operationalizing the "non-staring" condition in two different ways: starrers were either distracted from the experimental situation, i.e., the starees' image, by a demanding cognitive task or left with just a blank screen and the instruction to keep their mind busy with anything but the experiment, following the standard paradigm.

We did not find any staring effect at all, not in the EDA data and not in the 'conscious guessing' data. Thus the experiment failed in demonstrating any staring effect. Regarding the "distraction paradigm" four out of five variables scored in the hypothesized direction. The effect-sizes for to the largest difference reached  $d = 0.57$  and the according test got close to significance. These results suggest that distraction may be a crucial and so far neglected issue in these experiments and we conclude that there is first evidence regarding the importance of the activity of the starrer in the non-staring condition. In an adequately powered study this effect would have been significant.

Finding no evidence for a staring effect our study can be put in line with two formerly published studies (Lobach & Bierman, 2004; Schlitz, Wiseman, Watt & Radin, 2006). None of these studies could find effects with EDA as well as conscious guessing as dependent variables. In fact it seems "...that the staring paradigm is not the easily replicable paradigm that it is claimed to be" (Lobach & Bierman, 2004; p. 1), and there are different well known lines of reasoning for the failure to replicate the findings of former studies: (i) there is mere anecdotal evidence for a remote staring effect and some experimental studies easily mistake artifacts for effects; (ii) there is such an effect but we missed it for several reasons; (iii) the psi phenomenon under consideration does not show up in a stable and replicable mode but is rather moderated by variables in a larger context.

The first (i) position focuses mainly on the methods and set-ups of earlier work. Some of the earlier studies had methodological shortcomings mainly in randomization and EDA measurements. Parts of the effects found in these studies may be explained by this fact but not all. A detailed discussion can be found in Schmidt, Schneider, Utts & Walach (2004). There we have explained that in our view some effects can be attributed to methodological shortcomings but that there remains a substantial effect which lacks a classical explanation.

Regarding the position (ii) we can put our study in line with the two other recently published studies (Lobach & Bierman, 2004; Schlitz, Wiseman, Radin & Watt, 2005), which also failed to replicate staring effects with EDA as well as conscious guessing as dependent variables. Several reasons are possible for such a failure and we will restrict ourselves to just two. In our Remote Staring meta-analysis (Schmidt, Schneider, Utts & Walach, 2004) we found an effect-size for the EDA paradigm of  $d = .13$  which corresponds approximately to an eighth of a standard deviation. For an effect so small in size, all remote staring experiments conducted so far, including the one presented here, are underpowered by far. One would need studies with several hundreds of participants in order to achieve a reasonable power. Thus, it might be the case that the effect could just not be demonstrated because our study was too small. Nevertheless some studies report significant findings although they did not have this size. With a number of 50 sessions our study can even be placed in the upper range of Remote Staring studies. While this may be too small if one assumes a constant and true effect size of roughly  $\delta = .13$ , it maybe also the case that there are unknown moderators to this effect or that such a constant effect model does not hold true at all for Psi studies (see e.g., Lucadou, 2001). Another possibility is that we did not have adequate experimenters or participants necessary to constitute a Psi-conducive system. Especially remote staring experiments are said to be sensitive to experimenter effects, (e.g., the Wiseman-Schlitz studies, but see also Juniper & Edlmann, 1998). Regarding participants so far only unselected samples have been tested and it was suggested to perform pretests or screening trials to select participants who can perform this task successfully. The

third option (iii), Psi phenomena just showing up in an unstable manner, is of course a valid option, and there are various theoretical models referring to this that have been presented elsewhere (Walach & Schmidt 2005).

We conclude that previous evidence for an intentional influence effect of a person staring at somebody in a distant room through a closed circuit TV system could not be replicated in this study, using state of the art methodology. We found weak evidence for the potential modifying influence of the starrer's mindset. Future studies trying to pinpoint the effect would have to be larger by several orders of magnitude.

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## Exploring the Links Between Nocturnal Hallucinatory Experiences and Personality Characteristics

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### Abstract

*A number of studies have demonstrated high prevalence rates of hypnagogic and hypnopompic hallucinations in the general population, such as sensations of floating, seeing lights, hearing noises, being called, and being touched. There are a number of well documented cases of ESP and crisis apparitions that have also occurred during the hypnagogic/hypnopompic states, such as forms of ESP, telepathy, and out-of-body experiences. Other formal links between paranormal or anomalous experiences may be seen in the positive relationship consistently found between HG/HP and dissociational/absorption experiences and fantasy proneness, which correlated significantly higher on schizotypy and perceptual aberration, without suffering from the more unpleasant symptoms. Participants who have HG/HP experiences have a higher capacity for (1) schizotypy proneness and cognitive-perceptual schizotypy, and (2) dissociation, absorption, and fantasy proneness than non-experients. A total of 648 undergraduate psychology students from Argentina and 214 from Peru were tested. The results suggest that absorption and cognitive-perceptual aspects of schizotypy, in particular, are essential features of persons with HG/HP experiences. The results, which suggest that persons who experience HG/HP are likely to have a rich imaginal life, are consistent with other studies that have found measures of absorption to be successful predictors of psychic phenomena.*

## Introduction

Hypnagogic hallucinations are vivid perceptual experiences occurring at sleep onset, whereas hypnopompic hallucinations are similar experiences that occur on awakening (Sherwood, 2002). Here, the use of the term *hallucination* is appropriate because the experiences occur while one is awake and aware of one's immediate surroundings. The term *hallucination* was first used in the English language in 1572 to refer to "ghostes and spirites walking by nyght" (Sarbin & Juhasz, 1975). Hypnagogic and hypnopompic hallucinations may include experiences in many modalities, including a sensed presence, visual and auditory hallucinations, being touched, falling, flying and floating sensations, and out-of-body experiences (Cheyne, Newby-Clark, & Rueffer, 1999; Cheyne, Rueffer, & Newby-Clark, 1999).

However, studies have also demonstrated high prevalence rates of hypnagogic and hypnopompic hallucinations in the general population. For example, Ohayon et al. (1996) observed that 37% of normal subjects reported experiencing hypnagogic hallucinations and 12% reported hypnopompic hallucinations. Although in this study both types of hallucinations were more common among subjects with sleep-related disorders (insomnia, excessive daytime sleepiness), the prevalence of these hallucinations far exceeded that which can be explained merely by association with these disturbances. Similar rates were reported in a study investigating the prevalence of hallucinations in the general population in three countries (the United Kingdom, Germany, and Italy), with 24.8% of subjects reporting hypnagogic hallucinations and 13.8% reporting hypnopompic hallucinations (Ohayon, 2000).

The hypnagogic state, which is considered to be "unusually receptive" (Schacter, 1976, p. 468), shares features of the psi-conducive state such as physical relaxation, reduction in sensory distraction, and increased internal attention (Braud & Braud, 1975; Honorton, 1977; Mavromatis & Richardson, 1984). According to Mavromatis (1987), support for a relationship between psi and hypnagogia (his generic term for hypnagogic and hypnopompic imagery) comes from the

practices and literature on occultism and spiritualism, the literature on controlled psi experiments, and spontaneous cases of psi during hypnagogic practices. Some experimental studies have found that hypnagogic/hypnopompic imagery seems to be conducive to telepathy (Gertz, 1983; Schacter & Kelly, 1975), perhaps more so than dreaming (Braud, 1977).

The ganzfeld technique, which has provided some of the best evidence for ESP, is believed to induce a hypnagogic-like state (Bertini, Lewis, & Witkin, 1969). Palmer, Bogart Jones, and Tart (1977) reported a ganzfeld study that found significant correlations between ESP z performance (psi-hitting or psi-missing) and scoring on altered state of consciousness/hypnagogic imagery scales.

In terms of spontaneous cases, there are a number of well documented cases of ESP and crisis apparitions that have occurred during the hypnagogic/hypnopompic states. Some writers believe that hypnagogic visions might be an early form of ESP (Leaning, 1925; Mavromatis, 1987). Gifted subjects also use hypnagogic imagery (White, 1964); for example, well known psychics such as Garrett and Northage have described personal examples of telepathy and clairvoyance during the hypnagogic and hypnopompic states (Mavromatis, 1987; these include aura vision as an aspect of their psychic experiences (e.g., Garrett, 1939; Swann, 1975) and reports of a collectively perceived anomalous “glow” surrounding a human body.

Moody (with Perry, 1993) also described a number of cases of visionary encounters with departed loved ones inside a psychomanteum chamber that share characteristics of hypnagogic imagery. OBEs also tend to occur spontaneously during the hypnagogic/hypnopompic states (Mavromatis, 1987); McCreery (1993) found a positive relationship between the number of hypnagogic imagery episodes and the frequency of hypnagogic imagery. Mavromatis (1987) also listed a number of reported hypnagogic phenomena: sensations of floating, sinking, and drifting; seeing lights, images, and landscapes; hearing noises, music, and one’s name being called; and the sensation of being touched.

People who had had these HG/HP experiences were described as “happy schizotypes,” who are able to use their capacities of altering consciousness and of applying unusual styles of perceptual processing without suffering from the more unpleasant symptoms (McCreery & Claridge, 1995). Schizotypy may be conceived as a personality dimension that is continuously distributed throughout the normal population; its defining characteristic is that people at the high-scoring end of this distribution have a putatively heightened susceptibility to psychotic breakdown. The personality dimension of schizotypy may be correlated with a variety of other phenomena besides psychosis. Following these findings, there are strong arguments for a link between schizotypy and creativity (Claridge, Prior, & Watkins, 1989), on the one hand, and out-of-body experiences (McCreery & Claridge, 1995), on the other, that correlated significantly higher with schizotypy, perceptual aberration, magical ideation, and synesthesia.

Other formal links between paranormal/anomalous experiences may be seen in the positive relationship consistently found between HG/HP and dissociational/absorption experiences (see Irwin, 1985). Absorption is described as a capacity for episodes of absorbed and “self-altering” attention that are sustained by imaginative representations (Tellegen & Atkinson, 1974). During these episodes, individuals become totally absorbed in their experience, with “a full commitment of available perceptual, motoric, imaginative, and ideational resources to a unified representation of the attentional object” (Tellegen & Atkinson, 1974). Absorption experiences are generally considered to be the most common of all dissociative experiences.

Furthermore, subjects who reported spontaneous anomalous/paranormal experiences tended to have a higher level of imaginative/fantasy activity or fantasy-proneness. This finding is consistent with Wilson and Barber's (1982) views of the characteristics of a fantasy-prone personality and may support Blackmore (1978) and Siegel (1980) in their suggestion that the reported spontaneous anomalous/paranormal experiences could be a hallucinatory fantasy, which would be especially easy for the fantasy-prone subject to produce. It is also

consistent with the finding that people who are more attentive to their mental processes may be more open to experiencing HG/HP.

Fantasy proneness appears to be greater among experiencers than non-experiencers HG/HP (Wilson & Barber, 1982). Stanford (1987) also suggests that various types of fantasy during childhood may correlate differentially with the circumstances of the OBEs' and HG/HP's occurrence. In a clinical sense, clients who are fantasy-prone and also get deeply absorbed in events with an internalized, curious, intellectual, and stable personality might also report having spontaneous anomalous/paranormal experiences.

In summary, it seems possible that features of the HG/HP states can facilitate possible confusion between reality and imagination in some instances. There are also a number of specific features that may facilitate anomalous interpretations. This may be more likely if a person has little knowledge of normal hypnagogic/hypnopompic features, or if a person is within a group or culture that has certain explanations for particular phenomena, or if the person already believes in anomalous phenomena. It is possible that the HG/HP states may be both conducive to, and also misinterpreted as involving, anomalous processes and agencies. In the absence of more objective information, the decision as to which interpretation is made may depend on the individual and the context in which the experiences take place.

The HG/HP experiences are phenomena worthy of study in their own right, like other aspects of human experience. Thus the focus is on the experience or phenomenon, whatever the interpretation. These experiences, like everything else in the mental life of the healthy individual, do not occur in a vacuum but are closely interwoven with many other psychological processes. For these reasons, we argue that hypnagogic/hypnopompic experiences are part of human experience and as such deserve and require study in and of themselves, with and without efforts to relate them to possible paranormal components.

The present study is exploratory. A number of specific hypotheses are tested: Argentine and Peruvian participants who have HG/HP experiences have a higher capacity than non-experiencers for (1)

schizotypy proneness and cognitive-perceptual schizotypy (Raine's schizotypy sub-factor), and (2) dissociation, absorption, and fantasy proneness. In order to evaluate differences between Argentine and Peruvian students an analysis will also be carried out.

## Method

### *Participants*

A total of 654 undergraduate psychology students at the Faculty of Psychology of the Universidad Abierta Interamericana from Argentina, of whom 494 (76%) were females and 154 (24%) were males, ranging in age from 17 to 57 years ( $M = 25.11$ ,  $SD = 7.23$ ) (Argentine group), plus a total of 214 undergraduate psychology students at the Faculty of Psychology Universidad Ricardo Palma, Facultad de Psicología, from Lima, Peru, of whom 159 (74%) were females and 55 (26%) were males, ranging in age from 17 to 47 years ( $M = 20.87$ ;  $SD = 3.51$ ) (Peruvian group) were tested.

### *Design and materials*

Participants completed seven scales: The *Hallucination Experiences Scale* (38-item self-report rated 0 = never to 5 = very often; Parra, Adróver, González, 2006), which measures hallucination proneness (the sub-factor Hypnagogic/Hypnopompic experiences is derived from the following items: "Just when falling asleep or waking..."; 12. Hear voices or conversations, music or melodies, sounds; 25. See shadows, or human or non-human figures close to my bed; 30. Have felt a cold breeze of air which blows in my face; 33. Sense of presence; and 38. Smell food or perfume); *Schizotypal Personality Questionnaire* (74 yes/no items, Cronbach's  $\alpha = .83$ ; Raine, 1991; Raine, 1992; Raine & Baker, 1992; Raine & Benishay, 1995), which measures three factors of schizotypy (the sub-factor Cognitive-Perceptual will be used); the *Dissociation Experiences Scale, DES* (28-item self-report, Likert scale 1-100) (Bernstein & Putnam, 1993), which measures dissociative experiences, many of which are normal experiences; the *Tellegen*

*Absorption Scale* (34 true/false items; Tellegen & Atkinson, 1974), which measures how frequently people engaged in absorptive activities; and the *Creative Experiences Questionnaire* (25 true/false items; Merckelbach, Horselenberg, & Muris, 2001), which measures fantasy proneness. As an addition, a *Spontaneous Paranormal Experiences Questionnaire*, an 18-item self-report inventory to collect information on paranormal experiences, was used. It was inspired by the English version of the *Anomalous/Paranormal Experiences Inventory* (Gallagher, Kumar, & Pekala, 1994), and Palmer's (1979) survey of students in Charlottesville, VA, USA.

The questionnaires were given under the pseudo-title *Questionnaire of Psychological Experiences, Forms A, B, C*, etc. in a counterbalanced order to encourage unbiased responding. The set of scales was given in a single envelope to each student during a class. Each student received vague information about the aims of the study and was invited to complete the scales voluntarily and anonymously in a single session, selected from days and times previously agreed upon with the teachers. Participation was voluntary.

## Results

Table 1: Descriptive analyses of HG/HP experiences of Argentine ( $n = 654$ ) and Peruvian students ( $n = 214$ ; figures in parentheses are percentages)

<i>HG/HP items</i>	<i>Group</i>	<i>Argentine</i>	<i>Peruvian</i>
12. Hear voices or music and sounds	Non-experients	450 (68.8)	137 (64.0)
	Experients	204 (31.2)	77 (36.0)
25. See shadows close to my bed	Non-experients	533 (81.5)	169 (79.3)
	Experients	121 (18.5)	45 (20.7)
30. Have felt a cold breeze of air	Non-experients	507 (77.6)	151 (70.9)
	Experients	147 (22.4)	63 (29.1)
33. Sense of presence	Non-experients	511 (78.1)	172 (80.4)
	Experients	143 (21.9)	42 (19.6)
38. Smell food or perfume	Non-experients	532 (81.6)	172 (80.3)
	Experients	122 (18.4)	42 (19.7)
HG/HP (Total)	Non-experients	249 (38.1)	56 (26.2)
	Experients	405 (61.9)	158 (73.8)

Participants who answered “yes” (one time, sometimes, or frequently) were grouped as “experients,” and students who answered “no” were grouped as “non-experients.” Descriptive statistics for these two groups for HG/HP experiences is shown in Table 1.

Comparing Argentine and Peruvian experients, the Peruvian participants scored higher on the Schizotypy proneness score than the Argentine participants (Argentine = 23.27 and Peruvian = 30.92;  $t = 9.25$ ;  $p < .001$ , one-tailed). The rest of the psychological measures did not produce significant results (see Table 2). As a consequence of this we decided to regroup the Argentine and Peruvian students into one sample for further analysis.

Table 2: Comparison of personality and perceptual scores of Argentine and Peruvian students who report HG/HP experiences.

<i>Variables</i> <sup>(b)</sup>	<i>Groups</i> <sup>(a)</sup>	<i>Mean</i>	<i>SD</i>	<i>df</i>	<i>t</i>	<i>p</i>
Schizotypy proneness	Argentine	23.27	11.63	799	-8.25	< .001
	Peruvian	30.92	11.51			
Cognitive-Perceptual S.	Argentine	7.74	4.93	799	-1.83	.06
	Peruvian	8.46	4.87			
Interpersonal S.	Argentine	7.88	4.75	799	2.02	.04
	Peruvian	7.11	4.73			
Disorganized S.	Argentine	5.51	3.52	799	-1.62	n.s.
	Peruvian	5.97	3.75			
Dissociation	Argentine	23.66	11.71	800	-1.24	n.s.
	Peruvian	24.88	14.03			
Absorption	Argentine	24.61	13.34	800	-1.29	n.s.
	Peruvian	26.01	14.31			
Fantasy proneness	Argentine	33.16	15.58	800	-.08	n.s.
	Peruvian	33.27	17.26			

Note. (a) Non-experients  $n = 504$ ; Experients  $n = 83$

Hypothesis 1 was that experients would score higher on schizotypy prone (total score) and Cognitive-Perceptual schizotypy than non experients, which was supported ( $t = -9.36$ ;  $p < .001$ ); that experients would score higher on Cognitive-Perceptual schizotypy ( $t = -10.72$ ;  $p < .001$ ) than non experients, which was supported (the score for experients was significantly higher than for non experients;  $t = 4.24$ ;  $p < .001$ , one-tailed); and that experients would score higher on

Interpersonal ( $t = -4.79$ ) and Disorganized ( $t = -6.02$ ) than non-experients, which was also supported ( $p < .001$ , one-tailed) (see Table 3).

Hypothesis 2 was that experients would score higher on Dissociation than non-experients, which was supported (the score for experients was significantly higher than for non-experients;  $t = 10.74$ ;  $p < .001$ , one-tailed); that experients would score higher on Absorption than non-experients, which also supported (the score for experients was significantly higher than for non-experients ( $t = 10.81$ ;  $p < .001$ , one-tailed)); that experients would score higher on Fantasy proneness than non-experients, which was also supported (the score for experients was significantly higher than for non-experients;  $t = 10.14$ ;  $p < .001$ , one-tailed) (see Table 3).

Table 3: Comparison of personality and perceptual scores of students who report HG/HP experiences with those who do not report them ( $n = 868$ )

<i>Variable</i>	<i>Groups<sup>(a)</sup></i>	<i>Mean</i>	<i>SD</i>	<i>t</i>	<i>p</i>
Schizotypy proneness	Non-experients	19.99	11.095	-9.36	< .001
	Experients	28.02	11.67		
Cognitive-Perceptual S.	Non-experients	5.49	4.10	-10.72	< .001
	Experients	9.18	4.84		
Interpersonal S.	Non-experients	6.56	4.23	-4.79	< .001
	Experients	8.25	4.91		
Disorganized S.	Non-experients	4.58	3.26	-6.02	< .001
	Experients	6.16	3.63		
Dissociation	Non-experients	17.85	9.94	-10.74	< .001
	Experients	27.14	12.33		
Absorption	Non-experients	18.20	11.04	-10.81	< .001
	Experients	28.48	13.50		
Fantasy proneness	Non-experients	25.64	13.75	-10.14	< .001
	Experients	37.09	15.74		

Note. (a) Non-experients  $n = 306$ ; Experients  $n = 562$ ; ( $df = 799$ )

We constructed an index of psi experiences (Psi Index) for each subject based on the number of "yes" replies to questions about having had experiences of GESP in dreams, telepathy, precognition, past-life recall, out-of-body experiences, and apparitional experiences (see Alvarado, Zingrone, & Dalton, 1998-99). The Psi Index had a range from 0 (no experiences reported) to 5 (having reported all the

experiences listed). This index was correlated to the five HG/HP experiences (see Table 4) and SPQ's factors, DES, TAS, and CEQ scores (see Table 5).

Table 4: Pearson's *r* Correlations between HG/HP items with psi index (*n* = 868)

HG/HP Items	Psi index <i>r</i>	<i>p</i>	Age <i>r</i>	<i>p</i>
12. Hear voices or conversations, music or melodies, sounds.	.27	< .001	-.11	< .001
25. See shadows, or human or non-human figures close to my bed.	.24	< .001	-.04	n.s.
30. Have felt a cold breeze of air which blows in my face.	.25	< .001	-.01	n.s.
33. Sense of presence.	.24	< .001	-.03	n.s.
38. Smell food or perfume.	.18	< .001	-.06	.01
HG/HP Total	.28	< .001	-.13	.01

Table 5: Pearson's *r* Correlations between SPQ'S factors, DES, TAS and CEQ scores with psi index

Factors	Psi index <i>r</i>	<i>p</i>	Age <i>r</i>	<i>p</i>
1. Schizotypy proneness	.37	< .001	-.20	< .001
2. Cognitive-Perceptual S.	.52	< .001	-.11	.001
3. Interpersonal S.	.05	.139	-.06	.074
4. Disorganized S.	.21	< .001	-.12	.001
5. Dissociation	.36	< .001	-.15	< .001
6. Absorption	.40	< .001	-.16	< .001
7. Fantasy proneness	.38	< .001	-.09	.011
9. Age	-.06	.070	--	--

Data analysis was conducted using independent group *t* tests and Pearson correlations. We set an alpha of .05 (one-tailed) for our predicted analyses, and an alpha of .01 (two-tailed) for the rest. We are aware that we can be accused of over analyzing our data, but because our purpose was exploratory we felt that it was necessary to exhaust the comparison options that the individual psi experiences and the SPQ's factors, DES, TAS, and CEQ scores.

Which of the variables best discriminate experients and non-experients of HG/HP? A binary logistic regression was used to answer this question. Partly due to colinearity, after verifying that the

assumptions of the test were met, the forward Wald method was applied. No variables were excluded from the regression to reduce colinearity. For the sample of 868, the best model revealed (in step 2) that Absorption was the best predictor of aura experiences,  $\beta = .18$ , Wald = 11.24;  $df = 1$ ;  $p = .001$ ;  $\text{Exp}(\beta) = 1.20$ ; Nagelkerke's  $R^2 = .063$ . Cognitive-perceptual schizotypy was the second-best predictor,  $\beta = .05$ , Wald = 3.98;  $df = 1$ ;  $p < .04$ ;  $\text{Exp}(\beta) = 1.05$ ; Nagelkerke's  $R^2 = .075$ . The remaining variables contributed nothing of significance to the prediction.

## Discussion

The findings suggest that cognitive-perceptual aspects of schizotypy, in particular, are essential features of persons with HG/HP experiences; they also suggest that underlying dissociative processes such as absorption and fantasy proneness are associated with HG/HP experiences. The cognitive-perceptual aspects of schizotypy, dissociation, and absorption seem to be present in the personal predisposition for experiencing HG/HP experiences. The present study also examined the differences between persons who do and do not report HG/HP experiences on various cognitive and personality measures. The main analyses confirmed two of the five hypotheses, demonstrating a significantly higher level of cognitive-perceptual schizotypy, absorption, dissociation, and fantasy proneness between experiencers and non-experiencers. The results suggest that persons who experience HG/HP are likely to have a rich imaginal life, and they are consistent with other studies that have found measures of absorption to be successful predictors of psychic phenomena (Kohr, 1980; Palmer, 1979; Parra, 2006, 2008).

A possible theoretical model that seems to emerge from the present results is that of a "happy schizotype," (McCreery & Claridge, 1995) who is functional despite, or perhaps even in part because of, his or her anomalous experiences. Positive schizotypy, reflecting hallucinations and altered perceptual experiences, has been related to subjective anomalous and paranormal experiences and

beliefs (e.g., Simmonds & Roe, 2000; Wolfradt, Ouibaid, Starube, Bischoff, & Mischo, 1999). This variable also relates to heightened psi performance. Such data are consistent with the distinction made by Claridge (1985) between schizotypy as a long-term personality trait, or set of traits, and schizophrenia as a distinct breakdown process to which high schizotypy is only one predisposing factor. Claridge (1985) has in fact stressed the positive side of schizotypy, if not of schizophrenia itself, suggesting that a moderate degree of schizotypy may even be of adaptive value; hence the survival of whatever genetic determinant may give rise to it, despite the low fertility of diagnosed schizophrenics. The happy schizotype model may explain the pattern of the present results.

Another possible predisposition to extrasensory experiences may be the experient's dissociative tendencies. Surveys show that experients tend to score high on measures of dissociation and closely related constructs. According to Pekala, Kumar, and Marcano (1995), both dissociation (a mental state characterized by detachment from aspects of the self or the environment) and susceptibility to hypnosis are correlates of ESP experiences, sense of presence, and apparitional experiences (see Espinoza, 2004). People who are highly hypnotizable and fantasy prone report a high frequency of such experiences (Wilson & Barber, 1983). This is also in conceptual agreement with studies which have found that measures of fantasy-proneness seem to be successful predictors of psychic phenomena other than paranormal experiences (Wilson & Barber, 1983). Such findings suggest that visions of paranormal experiences may be related to cognitive processes involving fantasy proneness and cognitive-perceptual schizotypy proneness, and that these factors are correlated.

Collectively, these findings might be interpreted as suggesting that a capacity to enter altered states of consciousness is a factor in the predisposition to ESP experiences. Certainly a state of high absorption and dissociation is a common context for experiences; in fact, the score for experients was significantly higher on Dissociation (Argentine and Peruvian groups,  $p < .001$ , one-tailed), Absorption (Argentine and Peruvian groups,  $p < .001$ , one-tailed), and Fantasy proneness

(Argentine and Peruvian groups,  $p < .001$ , one-tailed). At the same time, there also seems to be a motivational component to this association.

It is tentatively concluded that the constellation of interrelated factors that make up the construct of the "fantasy-prone personality" provide a psychological predisposition for the extrasensory experiences. It also supports the view that extrasensory experiences of the type described here may have important clinical applications.

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## Book Review

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**A review of “The Parapsychological Revolution: A Concise  
Anthology of Paranormal and Psychical Research” by Robert M.  
Schoch and Logan Yonavjak (2008)**

Robert Schoch is an associate professor at Boston University who earned his PhD on geophysics and geology at Yale University. He is best known for his controversial work on the Great Sphinx of Giza and his theory that the monument is much older than is traditionally thought. His co-author Logan Yonavjak is a former Boston University student, with links to the Rhine Research Centre and the person who persuaded him that parapsychology literature was worth reading and reviewing. However, Schoch’s interest in paranormal phenomena began early in life and in a recent interview (Daily Grail, 2008) he attributes his fascination to his late grandmother, a member of the Theosophical Society. While never a Theosophist himself he revealed that reading various Theosophical works made him consider that perhaps there was a core of something being touched on that transcends the typical materialistic view of the universe. Given this background, and previous professional involvement in alternative theories and fringe areas of science, it is perhaps not surprising that Schoch should have turned his attention to parapsychology and psychical studies in this book.

*The Parapsychology Revolution* is comprised of fourteen articles from a variety of authors with associated commentary from Schoch and Yonavjak. They state that they did not come to this subject as paranormal “true believers” or as ardent debunkers but aim to present

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the subject so that readers can start to gain an appreciation of what all the fuss is about. Specific attention is paid to the problem of fraud within parapsychological research and examples of irregularities in experimental studies are discussed. However, it is probably fair to say that the authors are more critical of the alleged shortcomings of “Skepticism with a capital S” and those they refer to as “pseudo-skeptics” and overall their editorial stance is distinctly favourable towards parapsychology.

They begin by making it clear that the book deals with paranormal and psychical phenomena in a strict sense, including ESP (extrasensory perception: telepathy, clairvoyance, and precognition) and psychokinesis (PK, both on a micro- and macro- scale) but excluding topics sometimes included by the layperson under the umbrella term of the paranormal, such as UFOs, aliens and Big Foot. Perhaps more controversial is the decision to have no specific focus on survival research although William James’ case study on the *Trance Phenomena of Mrs Piper* is included as is a brief note on reincarnation focussing on Ian Stevenson’s work on the subject. A substantial amount of historical ground is covered, from an article by Edmund Gurney on *Crisis Apparitions and the Theory of Chance-Coincidence* extracted from *Phantasms of the Living*, first published in 1886, to a recent article on the evidence for distance healing by Larry Dossey (2007) published for the first time in this volume. Given that more than a century’s worth of research is reviewed, it is inevitable that some topics are omitted and there are areas which a reader might like to have seen dealt with in greater depth (the work of the Maimonides Dream Laboratory is one example) but nevertheless, the editors’ commentaries manage to provide a fairly cohesive framework for the book as a whole.

Part I of the book deals with Spontaneous Instances of the Paranormal with classic works by Edmund Gurney, Charles Richet and William James and an article on *Poltergeists, Electromagnetism and Consciousness* by William Roll. This section was for me, the most interesting and I felt the short concluding note on reincarnation could have been expanded to include a full article on the topic. Part II covers

Experimental and Laboratory work on the Paranormal, again starting with two classic works, this time from J.B. and Louisa Rhine on ESP and PK. These are followed by a report on the work of the now-defunct PEAR lab by Robert Jahn and Jessica Utts' article on *Replication and Meta-Analysis in Parapsychology*. The most recent of these latter two articles is still over a decade old and while more up to date work could have been included, it might be argued that this is an appropriate reflection on the current state of lab-based parapsychology research. Part III is a short section which discusses the potential practical applications of PSI studies. This includes just two, albeit interesting, articles; one on distance healing by Larry Dossey and a second on the military implications of remote viewing by L. R. Bremseth. The paucity of material included here makes this, in my opinion, the weakest part of the book. Part IV consists of overviews and reflections on PSI beginning with Marcello Truzzi's seminal article *On Some Unfair Practices Towards Claims of the Paranormal* and including papers from Jean Burns and Paul Stevens on theories of PSI. Serena Roney-Douglas' essay on *How the Scientific Establishment's Acceptance of ESP and PK Would Influence Contemporary Society* concludes this segment although I think that this intriguing piece might have been better placed as a conclusion to the previous section on the possible applications of parapsychological research which at present tails off in somewhat unsatisfactory manner.

In their concluding remarks the authors state that the parapsychology revolution is still an unfinished revolution and end with two clear points, first that research into PSI must continue and second that the research community must do more to publicly disseminate what it has learned about the paranormal so that this information can be used in a constructive manner. A bibliography of sources and further readings (incorporating internet resources) rounds off the volume. In common with Chris Carter's *Parapsychology and the Skeptics* (2007) Schoch and Yonavjak's *Parapsychology Revolution* is a substantial and considered defence of Parapsychology. It may not present much in the way of new ideas but it would nevertheless serve both as a helpful introduction for those new to the subject and as a

useful reference source for the more experienced. It is perhaps unfortunate for the field that none of these authors is presently employed as an academic parapsychologist.

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## Book Review

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### **A review of “The Gold Leaf Lady and Other Parapsychological Investigations” by Stephen E. Braude (2007)**

The title captured the romantic in me... The Gold Leaf Lady (something pre-Raphaelite was conjured) and then the cover, the very beautiful cover of this hardback edition didn't disappoint... here is a book which presents a lyrical insight to the good, bad and plain ugly work of a philosopher turned parapsychologist. It is not a poetry book as its title and appearance evoke but a book of stories – real stories, the memoirs, in fact, of an erudite man who has given over thirty years of his life to pursuing the elusive fibre of truth that we all hope will drop into our laps and end the is-it-isn't-debate that all things psi evoke.

In his own unaffected blog, Braude says when you turn pensionable age successfully, as he has, you can grant yourself a few concessions – like writing a re-collective book – half the sweat of publishing a paper and easier to assemble than his four previous books. So he has, and it's a treat. The Gold Leaf Lady may not lift veils for you but it will greatly deepen your appreciation of the investigative field and in particular the efforts of a few brave people, such as Braude, who have risked ridicule and marginalisation in the academic world by even suggesting that anything beyond quantifiable results exists at all.

So Braude takes us through key case studies that he, in his own view, feels privileged to have been a part of. He keeps us up to speed with an easy-read chapter on the history of paranormal phenomena

and manages to intersperse some thought-provoking pieces on synchronicity and astrology. There's value and substance here.

The lead story, the eponymous Gold Leaf Lady, gives us a whole chapter to settle with Braude and get used to his writing nuances – in particular his tangential style brought on largely when irritation is recalled. Nothing galls Braude quite so much as an uninformed debunker. Consequently there are times when tolerating the story of the detractors impacts negatively on full enjoyment of the vast cache of experience of the paranormal he has amassed. But perhaps that sense of irritation will come mostly from those who, like me, spectate, as the real investigators dirty their hands and occasionally, reputations. For those involved in theory-driven empirical field work the ignorance he has frequently encountered may be a familiar theme and therefore a valuable inclusion in the memoirs.

Certainly Braude appears to have had more than his fair share of dealing with cynics, or, often, hypocrites. Rarely has he been allowed the luxury of following his feelings freely, bludgeoned by the need to provide quantitative support and research while suspecting that mob-handed observations in forced settings are a barrier to effective research of themselves. So, it becomes clear, right from the preface, that Braude has incurred ostracisms from his colleagues that have clearly stuck in his gullet. Giving well-earned vent to this occasionally intrudes on the flow of the narrative but appear semi-cathartic to the author.

That said, this man, professor of Philosophy, University of Maryland, is unafraid to refer in general terms to 'the universe' as having an impact on our decisions and destiny. This tone and his easy humility soften the book saving it from being an academic albatross. Instead, here is a storyteller who will drop in – quite unexpectedly – that he has webbed feet and use this personal detail to illustrate the less exciting aspects of synchronicity (possibly the best chapter in the book). Apparently, if you are an unabashed webbed-footer, you openly share this fact with others thus encouraging fellow webbed-footers to come out. In other words, we of the traditional metatarsus format don't talk about our feet much and so never get to know just how many

people with webbed feet we are talking to. We're dealing here with averages rather than coincidences.

Braude's investigations have taken him to the wonderment of the unexplainable and right smack up against the charlatan and he shares both types of encounter openly. His handling of the delusional KR is given to us with kindness attached. KR believed he could transfer photographic images onto parts of his body or, say, other media such as a pillowcase. There's KR under group scrutiny believing he can see the transference of image but the examiners see a slightly crumpled pillowcase. There's great pathos here with Braude, again, displaying what we should all be wise to remember, that is: the two most successful tools in parapsychological investigation are not a good camera and recording system but humour and humility. His deference towards his subjects is a lesson to us all.

This book will bring insight into what it is truly like to immerse oneself in serious pursuit of understanding a 'new' science. And, as with all things new in science, rejection and ridicule often seem to come before acceptance and progress. Braude helps the reader to see that it's not like the TV shows. It's not always fun, certainly it's frequently boring, often disappointing but, from time to time, it can be deeply enriching on a personal and intellectual level. His final chapter, the treatment of astrology and his wife's insightful accuracy in this field shows him to be open minded and aware that to some extent we are all tomorrow's fools but we should continue to seek greater knowledge and enlightenment in the meanwhile.

Add this book to your collection if you want to feel privy to one of the greater minds involved in psi work today – because that's exactly it how it will make you feel.

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