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Individual, Perceptual and Psychological Differences between Psi-Tested Self-Claimed Psychics and Non-Psychics

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Abstract: The specific aim of the present study was to find psychological differences between psychic and non-psychics. Specifically, we hypothesized that the self-claimed psychics score higher than non-psychics on the following four dimensions: (1) Individual Differences (i.e., neuroticism, extroversion, psychoticism, cognitive and emotional empathy, and defense style); (2) Psychopathology (i.e., healthy and negative schizotypy, dissociation, hallucinations and abnormal perceptions, magical ideation and perceptual aberration); (3) Boundaries (i.e., transliminality and boundary 'thinness'); and (4) Perception (i.e., perceptual cognition and imagery, and sensation-seeking). The database used in this paper was originally collected as part of a project that investigated the so-called *token-object effect* (Parra & Argibay, 2013a, 2013b). Two categorization procedures were performed in order to split the sample into (1) *Psychic/high-psi-scorers* (*n* = 48) and (2) *Non-psychic/low-psi-scorers* (*n* = 44). Psychic/high-psi-scorers scored higher than non-psychic/low-psi-scorers on Extroversion, and they scored lower on Neuroticism and Psychoticism, which confirm previous findings. Other results showed that psychic/high-psi-scorers tended to have 'thinner' boundaries, and they reported more unusual/psychic experiences, than non-psychic/low-psi-scorers. The two groups, however, did not differ on schizotypy or dissociation. Generally speaking, the typical psychic in our study (similar to the one described by Eysenck) is 'sanguine', tends to be lively, sociable, carefree, talkative, pleasure-seeking, optimistic, and leadership-oriented.

Keywords: boundaries, anomalous experiences, individual differences, perception, psychics, psychopathology.

INTRODUCTION

Psychics allegedly provide paranormal impressions about target persons, sometimes using inductors or other objects (as in token-object reading), or instead just using personal information (name, age, etc.) of the target person. But are self-claimed psychics merely theatrical performers who use techniques such as cold reading and prestidigitation (conjuring tricks performed as entertainment) to produce the appearance of such psi abilities? Or, can self-claimed psychics demonstrate psi-hitting in ESP tasks? And do they have unique personality profiles? To answer these questions, we re-analyzed a database from our previous study on token-object reading with photographs.

There are too few studies on the personality of psychics for parapsychologists to draw firm conclusions about the profile of the typical psychic that might lead to an understanding of psi (for a review, see Palmer, 1996). However, Parra and Villanueva (2011a, 2011b) examined differences between groups of psychic and non-psychics on such personality factors as neuroticism, extroversion, openness, agreeableness, and conscientiousness, and found that the psychic group had significantly *lower* mean scores than 'non-psychics' on Neuroticism (p = .02), and Extroversion (p = .04), and significantly *higher* mean scores on Conscientiousness (p = .02). In another study, Parra (2011) investigated the differences between psychic and non-psychic claimants on Global Constructive Thinking, Emotional Coping, Behavioural Coping, and Esoteric Thinking using Epstein's *Constructive Thinking Inventory* (Epstein & Meier, 1989). Compared to non-psychic claimants, the psychic claimants tended to be more positive in attitude; their thinking was action-oriented; they were good behavioural copers; they thought in ways that promoted effective action; and they were more accepting of others. However, they were also more rigid in their thinking than non-psychics.

In a second study, Parra and Argibay (2012) hypothesized that individuals who claimed paranormal abilities would score higher on dissociation, absorption, and sensation-seeking than individuals who did not claim paranormal abilities; in fact, the psychic group had significantly higher scores on dissociation (p = .01), absorption (p < .001), and fantasy proneness (p = .01), but there was no difference on sensation-seeking. We also found some gender differences, with male psychics having significantly higher mean scores than female psychics on measures of dissociation and fantasy proneness, and suggestively higher scores on absorption and sensation-seeking.

Two other studies using an ESP free-response task (ganzfeld and psychomanteum) showed a number of significant differences in terms of psi scores; for example, Parra and Villanueva (2003a) found a significant

relationship between extraversion and ESP scores ($p < .001$), but not with neuroticism scores. Parra and Villanueva (2011a) then measured levels of visual imagery, visual hallucination, auditory hallucination, and tactile hallucination in participants who then underwent a mirror-gazing stimulation using Moody's (1992) psychomanteum. Participants who scored high on visual imagery, visual hallucination, auditory hallucination, and tactile hallucination, tended to psi-hit. A marginally significant difference was found between the high/low visual imagery groups ($p = .07$), and significant differences were found between the high/low visual hallucination groups ($p = .037$), and the high/low tactile hallucination groups ($p = .032$). Given that suggestion may have a causal role in the experience of anomalous perception, it is plausible that the incidence of psi in the psychomanteum condition was a function of explicit suggestions for such experiences presented during the facilitation procedure, which may have been augmented by restricted stimulation and dissociation.

Study Design

In the present study, we compare a group of self-claimed psychics with a group of ordinary people (non-psychics) on a range of psychological variables (these comparisons are similar to those made in our other studies —see Parra & Argibay, 2007, 2009, 2012). Most of the analyses in the present study are exploratory, in order to uncover for the first time possible personality and individual differences, and we intend to seek replication of these differences in our other databases. We propose the following hypothesis—Psychics score higher than non-psychics on the following eleven scales, grouped under four dimensions (Individual Differences, Psychopathology, Boundaries, and Perception):

1. Individual Differences

H1. Neuroticism, Extroversion, Psychoticism, measured with *Eysenck's Personality Questionnaire Revised-Abbreviated* (Eysenck & Eysenck, 1975);

H2. Cognitive and Emotional empathy, measured with the *Interpersonal Reactivity Index* (Davis, 1996);

H3. Defense Mechanism, measured with the *Defense Style Questionnaire* (Andrews, Singh, & Bond, 1993);

2. Psychopathology

H4. 'Healthy' and negative schizotypy, measured with the *Oxford-Liverpool Inventory of Feelings and Experiences* (Mason, Claridge & Jackson, 1995);

H5. Dissociation, measured with the *Dissociative Experiences Scale* (Bernstein & Putnam, 1986);

H6. Hallucinations and abnormal perceptions, measured with the *Cardiff Anomalous Perception Scale* (Bell, Halligan, & Ellis, 2006);

H7. Magical Ideation and Perceptual Aberration, measured with the *Magical Ideation Scale* and the *Perceptual Aberration Scale*, respectively (Chapman, Chapman, & Raulin, 1976; Eckblad & Chapman, 1983);

3. Boundaries

H8. 'transliminality', measured with the *Revised Transliminality Scale* (Thalbourne, 1998);

H9. Boundary thinness, measured with the *Boundary Questionnaire* (Hartmann, 1989);

4. Perception

H10. perceptual cognition and imagery, measured with the *Vividness of Visual Imagery Questionnaire–Revised* (Marks, 1995);

H11. Sensation-Seeking, measured on the *Sensation-Seeking Scale* (Zuckerman, 2007).

The eleven scales are detailed in the *Instruments* section below.

METHOD

Participants

Total number of participants was 212, from which were drawn the following two main groups:

Psychic/high-psi-scorers. This group consisted of 48 participants (37 females [77%], and 11 males [23%]), all of whom were well-educated, psi-believing participants. Their ages ranged between 18 and 65 years (Mean =

41 years; *SD* = 13 years). All participants had some training in meditation or other techniques involving an internal focus of attention. They were recruited by mailed announcements (pamphlets), and also by an announcement placed on the Internet <www.alipsi.com.ar>.

Non-psychic/low-psi-scorers. This group consisted of 44 participants (28 females [65%], and 16 males [35%]), all of whom were well-educated, psi-believing participants. Their ages ranged between 17 and 66 years (Mean = 42 years; *SD* = 14 years). Fifty percent of the participants had some training in meditation or other techniques involving an internal focus of attention. They also were recruited by mailed announcements (pamphlets), and also by an announcement placed on the Internet <*www.alipsi.com.ar*>.

Categorization Procedure

The database used in the present study was originally collected as part of a project that investigated the so-called "token-object effect" (Parra & Argibay, 2013a, 2013b) and consisted of a series of sessions with participants. Two categorization procedures were performed in order to split the sample into (1) psychics and non-psychics, and (2) 'high' psi-scorers and 'low' psi-scorers.

1. Psychic and non-psychic groups. An index of psi abilities (Psi Index) was taken based on participants' responses (i.e., 'One time' or 'Multiples times') to questions about extrasensory/psi abilities (see section below, *Psychic and Non-psychic groups*). The index had a range from 0 = *no ability*, to 25 = *having reported all the abilities listed* (i.e., paranormal/anomalous feelings or impressions, being at unknown places or touching things, and aura vision). Mean score = 8.32 (*SD* = 4.75). Then, scores were clustered into two groups: Psychic group = 0 to 8, and non-psychic group = 9 to 25 (Median split-cut off = 8).

2. High psi-scorer and low psi-scorer groups. An index of psi-hitting for each subject based on hit-counts of three experimental sessions was created. Our database contained three runs of eight trials each under psychometry or 'mental' conditions—i.e., a total of = 24 trials (8 per 'living/dead' condition, 8 per 'suicide/non-suicide' condition, and 8 per diseased/healthy—see section below, *Token-Object Tests*). Hit-scores ranged from 0 to 24 (Mean hit-rate = 11.78; *SD* = 4.57). Then, the low and high psi-hit groups were formed (median-split cut-off = 12; psychic group = 13 to 24, and non-psychic group = 0 to 11); a group of participants who scored at the median score of 12 was also formed (*n* = 39). Thus, a

psychic/high psi-scorer group (n = 48), and a non-psychic/low psi-scorer group (n = 44) as a control (comparison) group were formed.

3. Residual groups. There were two residual groups remaining from the total sample (N = 212): psychic/low-psi-scorers (n = 38) and non-psychic/high-psi-scorers (n = 43). Although there were five groups altogether, only two were used for comparison (i.e., psychic/high psi scorers and non-psychic/low psi scorers).

Token-Object Tests

The "Psi and Death of the Person-Target" Experiment. The aim of this study was to compare mental and motor conditions using images of dead people as targets. Two studies were conducted using highly emotional iconic representations: (1) the 'living/dead' condition (8 trials); four photographs of persons still alive, and four of persons already dead, and (2) the 'suicide/non-suicide' condition (8 trials); four photographs of people who had committed suicide (two men and two women), and four of people who had died a natural death (same age and gender as the suicides).

Although a two-task condition was used to elicit impressions about the picture-target (dowsing and psychometry—i.e., 'motor' and 'mental' conditions, respectively), we used the database of scores under 'Mental' condition (i.e., psychometry only) because this condition scored significantly above chance, M = 2.39, $t(212) = 4.55$, $p < .001$. The 'Mental' condition also performed better than the 'Motor' condition, 'Mental' = 2.39 vs. 'Motor' = 1.98, $t(213) = 2.95$, $p = .004$. No significant differences were found under the suicide/non-suicide condition (for details, see Parra & Argibay, 2013a).

The "Anomalous Remote Diagnosis" Experiment. The aim was to compare two conditions, 'Mental' and 'Motor', using pictures of faces of sick persons as targets to determine if participants scored differently in two conditions: (1) diseased persons (= 4 trials) vs. (2) healthy persons (4 trials)—total: 8 trials. Although two task conditions were also used to get impressions about the picture-target (dowsing and psychometry—i.e., 'Motor' and 'Mental' condition), we used the 'Mental'-condition database because it scored significantly above chance, M = 2.32, $t(223) = 4.83$; $p < .001$, and it scored better than the 'Motor' condition: 'Mental' = 2.32 vs. 'Motor' = 2.15, $t(223) = 3.61$, $p < .001$ (for details, see Parra & Argibay, 2013b).

For both experiments, the experimenters asked the participants *to remain with eyes closed, quiet, waiting for intimations about the object for a*

few minutes. Participants remained with their hands over the stimulus photograph, waiting to receive impressions. The aim was to obtain a combination of impressions, feelings, intuitions, and imagery related to the target photograph. The yes/no responses of the participants were obtained by coding impressions, feelings, and intuitions, touching and seeing each photo stimulus. AP handed out envelopes containing the pairs of photographs. Each pair was supplied with an answer sheet including written test instructions (also given verbally). Before the psi task, all participants underwent a nine-minute relaxation exercise using the voice of AP. Each participant received four pairs of photographs to be touched for impressions.

Instruments

Four psychological dimensions were examined: Individual Differences, Psychopathology, Boundaries, and Perception. An additional instrument was used to cluster psychic claimants and non-psychics (see section below, *Psychic and Non-psychic groups*).

Individual Differences

Eysenck Personality Questionnaire Revised-Abbreviated (EPQR-A; Eysenck & Eysenck, 1975; Sandin et al., 2002). This is a well-known 94-item self-report inventory, with 'yes' or 'no' responses to items that measure two personality dimensions: Neuroticism (Low-High) and Extroversion (Cronbach's $\alpha = 0.91$, Argentine version).

Interpersonal Reactivity Index (IRI; Davis, 1996). The Spanish version of the previously translated and tested Spanish version by Pérez-Albéniz, de Paúl, Etxebarría, Montes, and Torres (2003). IRI is a 33-item self-report, 1-5 Likert scale (1 being = lowest score to 5 = highest score of empathy), which contains four subscales: two on Cognitive Empathy and two on Emotional Empathy. The first two are Perspective-Taking and Emotional Comprehension, which aim to measure the tendency to try to find out and understand how another individual is feeling at a specific point in time (López-Pérez, Fernández, & Abad, 2008). The second two are Empathic Concern and Positive Empathy (Emotional Empathy). The scores on both scales are combined to obtain a total score, such that a high total score implies high empathy (Cronbach's α Total score = 0.87, Argentine version).

Defense Style Questionnaire (DSQ-40; Andrews, Singh, & Bond, 1993; Blaya, Kipper, Perez Filho, & Manfro, 2003). The DSQ-40 is a 40-item

questionnaire that derives from an earlier 88-item version (Bond, Gardner, Christian, & Sigal 1983; Bond, Perry, Gautier, Goldenberg, Oppenheimer, & Simand, 1989), relabelled in terms of DSM-III-R defenses (Andrews et al., 1989). The aim of this instrument is to identify the characteristic style of how people, consciously or unconsciously, deal with conflict based on the idea that people can accurately comment on their behavior. Four defenses are related to the mature factor (sublimation, humour, anticipation and suppression); four are related to the neurotic factor (undoing, pseudo-altruism, idealization and reaction formation), and twelve are related to the immature factor (projection, passive-aggression, acting-out, isolation, devaluation, 'autistic fantasy', denial, displacement, dissociation, splitting, rationalization and somatization).

Psychopathology

Oxford-Liverpool Inventory of Feelings and Experiences (O-LIFE; Mason, Claridge & Jackson, 1995; Mason, Claridge, & Williams, 1997). The O-LIFE is a 150-item questionnaire with items requiring 'yes' or 'no' responses to assess schizotypy in terms of four dimensions: Positive Schizotypy is assessed by Unusual Experiences and Cognitive Disorganisation—a tendency for thoughts to become derailed, disorganised or tangential (thought disorder)—and Negative Schizotypy by Introvertive Anhedonia and Impulsive Nonconformity. Psychometric evaluation of the O-LIFE has shown good test-retest reliability (r = 0.80), as well as acceptable internal consistency (α = 0.77). The Cronbach α measure of internal consistency was 0.91 in the Argentine version of O-LIFE.

Dissociative Experiences Scale (DES; Bernstein & Putnam, 1986; Carlson & Armstrong, 1994; Carlson & Putnam, 1993). The DES is a 28-item self-report instrument with a 0 to 100% response scale. We used an American version, translated into Spanish. It has very good validity and reliability and good overall psychometric properties (Carlson & Armstrong, 1994).

Cardiff Anomalous Perception Scale (CAPS; Bell, Halligan & Ellis, 2006) consists of 32 self-report items designed to assess perceptual anomalies such as changes in levels of sensory intensity, distortion of the external world, sensory flooding and hallucinations. Participants were asked to rate each item using a no (0) and yes (1) format. A higher score indicates a higher number of perceptual anomalies, scores range from 0 (low) to 32 (high). The internal reliability of the CAPS is good, with a Cronbach's α coefficient of .87. Test-retest reliability has also been found to be acceptable for the Spanish version (Jaén-Moreno, Moreno-Díaz, Luque-Luque, & Bell, 2014).

Magical Ideation Scale/Perceptual Aberration Scales (MIS/PAS; Chapman, Chapman, & Raulin, 1976, 1978; Eckblad & Chapman, 1983). The Magical Ideation Scale (MIS; Eckblad & Chapman, 1983) has 30 true/false items that assess erroneous beliefs based on magical thinking (e.g., "I have occasionally had the silly feeling that a TV or radio broadcaster knew I was listening to him"). The 35-item (true/false) Perceptual Aberration Scale (PAS; Chapman et al., 1978) assesses psychotic-like experiences such as bodily discontinuities and unusual scenery experiences (e.g., "I have felt that something outside my body was a part of my body"). The MIS (with $\alpha = .79$), and PAS ($\alpha = .84$), are used in the present study.

Boundaries

Revised Transliminality Scale (RTS; Thalbourne, 1998, 1999)—the RTS has 29 true/false items, that measure *transliminality*, which is defined as the "hypothesized tendency for psychological material to cross (*trans*) thresholds (*limines*) into or out of consciousness" (Thalbourne & Houran, 2000, p. 853). High transliminality tends to imply (alleged) paranormal experience, mystical experience, creative personality, fleeting manic experience, magical ideation, high absorption, fantasy proneness, hyper-sensitivity to sensory stimulation, and positive attitude towards dream interpretation (Houran, Thalbourne, & Hartmann, 2003).

Boundary Questionnaire (BQ; Hartmann, 1989, 1991). The BQ is a 138-item questionnaire including questions about many different aspects of boundaries (Barbuto & Plummer, 1998, 2000) It is divided into categories such as: Type of boundary, Sleep/wake/dream, Unusual experiences, Thoughts-feelings-moods, Childhood-adolescence-adulthood, Interpersonal, Opinions about organizations, Sensitivity, Neat/exact/precise, Edges/lines/clothing, Opinions about children and others, Opinions about people-nations-groups, and Opinions about beauty and truth. The response format for each question runs from "0" (not at all) to "4" (very much so). The BQ has good test-retest reliability (Kunzendorf & Maurer, 1988-1989).

Perception

Vividness of Visual Imagery Questionnaire—Revised (VVIQ-2; Marks, 1995). A scale consisting of 32 items referring to different situations where participants have 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, to 5 = No image at all. Both scores (closed-eyes and open-eyes) yield an average score (Spanish version Campos & Pérez-Fabello, 2009).

Sensation-Seeking Scale (SSS; Zuckerman, 2007) is a 40-item self-report inventory developed in an attempt to provide an operational measure of the sensation-seeking trait. Each item of this scale requires a 'true' or 'false' response. The internal reliability of the SSS is good, with a Cronbach's α coefficient of .87 (Aluja, Garcia, & Garcia, 2004, for Spanish version).

Psychic and Non-psychic groups. A questionnaire was used to classify psychics. The items included three types: (a) Belief in psi, (b) Extrasensory experiences (telepathy, ESP dreams, anomalous cognition, clairvoyance, paranormal/anomalous feelings or impressions of being at unknown places or touching things, and aura visions), and (c) Extrasensory abilities (except item "ESP dreams", e.g., "Could you or can you control your mind to pick up psychically the thoughts or feelings of another person at a distance?" or "Could you or can you control your mind to pick up psychically physical sensations or to diagnose diseases at a distance employing only an object from a person unknown to you?"). The participants rated their belief in psi (items 1.1 to 1.6 to be marked 'Yes' or 'No') very high for all items on the scale (98.4% indicated all items of ESP Belief). Questions 2.1 to 3.5, which included the frequency of each experience, were marked as either Never, Once, Sometimes, or Frequently.

Procedure and Participant Orientation

The participants met once a week, during two-hour workshops free of charge, organized at the Institute of Paranormal Psychology (IPP) in Buenos Aires, Argentina. In total, a number of workshops were conducted, free-of-charge, by the authors (AP and JCA) over a period of four years. The participants received some preliminary information about the tests. The authors, AP and JCA, aimed to create a friendly and informal social atmosphere, engaging in conversation with the participants before the test.

Participants completed the twelve instruments, and the questionnaire was designed to split the sample into psychics and non-psychics. After completing the questionnaires the participants completed the ESP tests. Joining the group was voluntary, and all data collected were treated confidentially. As a part of the recruiting procedure, the participants completed and signed a Consent Form.

RESULTS

The two-sample Shapiro Wilk (test of Normality) test was used to compare psychic/high-psi-scorers and non-psychic/low-psi-scorers. The Independent-Samples *t* test was used to test all hypotheses—all tests were one-tailed. Of a total of 52 *t* tests, 18 produced significant *p* values (35%) which is far in excess of the 5% we might expect by chance alone.

Table 1 lists results for tests of the Individual Differences hypotheses, H1 to H3. Regarding H1, psychic/high-psi-scorers scored higher on Extroversion, inversely scored lower on Neuroticism, and higher on Psychoticism, compared to non-psychic/low-psi-scorers.

Table 1
Comparison of Personality Measures (Individual Differences) between Psychic/High-Psi-Scorers and Non-Psychic/Low-Psi-Scorers

	Psychic/ High-Psi-Scorers (n = 48)		Non-Psychic/ Low-Psi-Scorers (n = 44)				
	Mean	*SD*	Mean	*SD*	*t**	*p***	η^2
Eysenck Personality Questionnaire							
Neuroticism	12.19	5.07	14.56	5.44	2.10	.038	.04
Extroversion	12.67	3.79	10.33	4.02	2.77	.007	.07
Psychoticism	2.48	1.86	4.31	4.57	2.52	.013	.06
Interpersonal Reactivity Index	118.85	14.93	115.89	19.36	0.80	.426	< .01
Perspective-Taking	29.71	5.58	28.87	7.20	0.60	.544	< .01
Emotional Comprehension	35.10	5.79	31.21	6.15	3.00	.003	.09
Empathic Concern	22.81	6.92	25.63	6.19	1.96	.053	.04
Positive Empathy	31.98	3.76	30.18	6.55	1.59	.115	.02
F1. Cognitive Empathy	64.81	10.04	60.08	11.88	2.00	.020	.04
F2. Emotional Empathy	54.79	8.23	55.82	10.40	0.51	.612	< .01
Defense Style Questionnaire							
Neurotic Factor	18.89	6.07	20.56	3.97	1.15	.254	.01
Mature Factor	31.03	4.18	27.91	5.43	2.36	.022	.05
Immature Factor	44.50	13.33	44.12	11.43	0.10	.914	< .01

* df = 90; ** one-tailed

For H2, psychic/high-psi-scorers scored higher on IRI, Perspective-Taking, and Positive Empathy, but not significantly. However, Emotional Comprehension and Cognitive Empathy scores were significantly higher for psychic/high-psi-scorers.

For H3, psychic/high-psi-scorers scored significantly higher on the Mature factor; not significantly higher on the Immature factor; and they scored lower on the Neurotic factor compared to non-psychic/low-psi-scorers.

Table 2 lists results for tests of the Psychopathology hypotheses, H4 to H7. Psychic/high-psi-scorers scored higher on Schizotypy (H4) and Dissociation (H5) than non-psychic/low-psi-scorers (OLIFE and DES, respectively), but not significantly. These hypothesis were not supported.

For H6, however, psychic/high-psi-scorers scored higher on the CAPS total score, and all nine CAPS subscales. All were significantly higher except Distortion of Form, Sensory Flooding, Thought Echo, and Temporal Lobe.

For H7, psychic/high-psi-scorers scored significantly higher on Magical Ideation.

Table 3 lists results for tests of the Boundaries hypotheses, H8 and H9. Psychic/high-psi-scorers scored higher on Transliminality (H8) than non-psychics/low-psi scorers, but not significantly. However, on boundary thinness (H9), psychic/high-psi-scorers scored higher on Type of Boundary, Unusual experiences, and Psychic experiences. Psychic/high-psi-scorers were higher on seven sub-scales, but not significantly.

Table 4 lists results for tests of the Perceptual hypotheses, H10 and H11. Psychic/high-psi-scorers scored significantly higher than non-psychic/low-psi-scorers on all three sub-scales of the VVIQ.

Finally, for H11, psychic/high-psi-scorers scored higher on Sensation Seeking (SSS), but not significantly.

Logistic Regression Analyses

Logistic Regression was conducted to test the differences between the two groups (psychic/high-psi-scorers and non-psychic/low-psi-scorers) on Individual Differences, Psychopathology, Boundaries, and Perception (see Table 5).

For Individual Differences, the best model indicated that Mature style of Defenses was the strongest predictor (R^2 = .14, B = .43, p = .025). However, the model is not significant, $\chi^2(7) = 12.35$, p = .090. The model explained 28% of the variance between groups and correctly classified 75% of cases.

For the Psychopathology measures, the best model indicated that Anomalous Experiences (CAPS total score) was the strongest predictor (R^2

= .15, B = .11, p = .006). The model is statistically significant, $\chi^2(6)$ = 18.41, p < .001. The model explained 30% of the variance between groups and correctly classified 75% of cases.

Table 2
Comparison of Psychopathological Measures between Psychic/High-Psi-Scorers and Non-Psychic/Low-Psi-Scorers

	Psychic/ High-Psi-Scorers (n = 48)		Non-Psychic/ Low-Psi-Scorers (n = 44)				
	Mean	*SD*	Mean	*SD*	*t**	*p***	η^2
Oxford-Liverpool Experiences Scale	3.86	9.19	2.77	2.13	0.71	.475	< .01
F1. Positive Schizotypy	2.28	6.04	1.39	1.35	0.89	.371	< .01
Unusual Experiences	1.16	2.88	0.62	0.65	1.13	.259	.01
Cognitive disorganisation	1.12	3.19	0.75	0.79	0.69	.489	< .01
F2. Negative schizotypy	1.57	2.91	1.39	0.96	0.37	.710	< .01
Introvertive Anhedonia	1.07	1.91	0.92	0.72	0.44	.657	< .01
Impulsive Nonconformity	.50	1.02	0.46	0.33	0.21	.828	< .01
Dissociation Experiences Scale	16.68	17.58	12.12	9.52	1.41	.160	< .01
Cardiff Anomalous Perception Scale	13.81	6.88	8.55	6.44	3.59	.001	.12
1. Sensory Intensity	2.17	1.49	1.29	1.29	2.86	.005	.08
2. Nonshared Sensory Experience	2.66	1.22	1.42	1.36	4.40	< .001	.17
3. Distorted Sensory Experience	1.43	1.29	0.87	1.04	2.14	.035	.04
4. Unexplained Source	3.38	1.58	2.00	1.39	4.22	< .001	.16
5. Distortion of Form	0.81	1.01	0.50	0.86	1.49	.140	.02
6. Verbal Hallucinations	1.30	0.95	0.53	0.76	4.05	< .001	.15
7. Sensory Flooding	0.87	0.76	0.66	0.74	1.29	.199	.01
8. Thought Echo	0.38	0.53	0.29	0.51	0.81	.417	< .01
9. Temporal Lobe	2.00	1.23	1.53	1.03	1.89	.062	.03
Magical Ideation Scale	13.11	5.37	9.24	4.10	3.47	.001	.11
Perceptual Aberration Scale	5.94	5.45	3.94	4.40	1.74	.086	.03

* df = 90; ** one-tailed

Table 3
Comparison of Boundaries Measures between Psychic/High-Psi-Scorers and Non-Psychic/Low-Psi-Scorers

	Psychic/ High-Psi-Scorers (n = 48)		Non-Psychic/ Low-Psi-Scorers (n = 44)				
	Mean	*SD*	Mean	*SD*	*t**	*p***	η^2
Transliminality	0.60	0.18	0.53	0.18	1.68	.096	.02
Boundary Questionnaire	250.09	42.32	230.74	42.12	2.01	.038	.04
1. Sleep/wake/dream	13.26	8.10	13.46	8.97	0.10	.917	< .01
2. Unusual experiences	19.35	8.49	15.49	7.38	2.11	.038	.04
3. Thoughts	21.02	9.37	17.83	8.52	1.55	.123	.02
4. Childhood/adolescence	9.95	3.83	10.20	3.94	0.27	.782	< .01
5. Interpersonal	23.02	3.65	21.26	4.37	1.94	.056	.03
6. Sensitivity	13.21	3.70	13.00	2.83	0.28	.780	< .01
7. Neat	17.70	5.01	17.31	5.12	0.33	.740	< .01
8. Edges	32.70	7.22	29.94	7.14	1.68	.097	.02
9. Children	22.30	5.21	22.34	4.49	0.03	.971	< .01
10. Organizations	21.56	4.65	20.06	4.36	1.45	.150	.02
11. People	29.40	5.41	27.34	6.53	1.51	.133	.02
12. Beauty	14.40	3.55	15.06	3.19	0.85	.395	< .01
13. Psychic experiences	12.77	5.95	7.46	5.18	4.14	< .001	.15

* df = 91; ** one-tailed

For the Boundaries measures, the best model indicated that Transliminality was the strongest predictor (R^2 = .07, B = .09, p = .045). However, the model is not significant, $\chi^2(2) = 4.49$, p = .106. The model explained 8% of the variance between groups and correctly classified 75% of cases.

For the Perception measures, the best model indicated that Visual Vividness was the strongest predictor (R^2 = .06, B = .03, p = .046). The model is only marginally significant, $\chi^2(2) = 5.64$, p = .060. The model explained 9% of the variance between groups and correctly classified 75% of cases.

These results suggest that scores on Anomalous experiences (CAPS), and perhaps Visual Vividness, demarcate key differences between psychic/high-psi-scorers and non-psychic/low-psi-scorers.

Table 4
Comparison of Perception Measures between Psychic/High-Psi-Scorers and Non-Psychic/Low-Psi-Scorers

	Psychic/ High-Psi-Scorers (n = 48)		Non-Psychic/ Low-Psi-Scorers (n = 44)				
	Mean	*SD*	Mean	*SD*	*t**	*p***	η^2
Vividness of Visual Imagery							
1. Vividness (Open Eyes)	33.52	15.25	41.92	16.57	2.32	.023	.05
2. Vividness (Close Eyes)	33.88	14.41	43.22	19.91	2.39	.019	.05
3. Vividness (Total)	34.58	14.97	42.62	16.63	2.24	.028	.05
Sensation Seeking Scale	6.72	2.29	6.67	2.33	0.10	.918	< .01

* df = 90; ** one-tailed

Table 5
Regression Analysis (Wald Method) between Psychic/High-Psi-Scorers and Non-Psychic/Low-Psi-Scorers for Individual Differences, Psychopathology, Boundaries, and Perception

Variables	R^2	Wald χ^2	*B*	*p*
Individual Differences[a]	.14	5.03	.43	.025
Psychopathology[b]	.15	3.52	.11	.006
Boundaries[c]	.07	3.86	.11	.045
Perception[d]	.06	3.96	.03	.046

[a] Entered: Neuroticism, Extraversion, Cognitive/Emotional Empath, and Immature, Mature and Neurotic style (Defenses); [b] Entered: Positive/Negative Schizotypy, Dissociative Experiences, CAPS, Magical Ideation Scale and Perceptual Aberration Scales; [c] Entered: Transliminality and Boundaries; [d] Entered: Visual vividness and Sensation Seeking.

DISCUSSION

The general aim of this study was to compare a group of tested and proven psychics with a group of tested and proven non-psychics, with the specific purpose of investigating psychological differences across a range of variables and dimensions. In the present study, psychics scored higher than non-psychics on Extroversion, and they scored lower on Neuroticism and

Psychoticism, which confirms previous findings of a significant correlation between free-response task performance and extraversion—it also replicates the finding in the PRL autoganzfeld database (Honorton, Ferrari, & Bem, 1990). A similar extraversion/ESP-scores correlation was found in a ganzfeld-stimulation study (Parra & Villanueva, 2003b). Honorton et al. concluded their report by stating ". . . that there is a significant ESP/extraversion relationship in the free-response studies, that the relationship is consistent across investigators and scales, and that meta-analysis of parapsychological research domains has predictive validity" (p. 35). For psychics, these results suggest a personality profile (or temperament) similar to the type described by Eysenck as "sanguine" (i.e., optimistic or positive, especially in an apparently bad or difficult situation), who tends to be lively, sociable, carefree, talkative, pleasure-seeking, and optimistic and leadership-oriented. Regarding psychoticism, Lester's (1993) American sample, and Sjöberg and Whaberg's (2002) Swedish sample, both showed a negative relationship between psychic experiences and psychoticism.

Psychics and mediums are said to use emotional empathy with their clients and sitters, often to the point of feeling that they are 'merging' with them. Some psychologists use the word *sensitivity* when theorizing that certain persons may be more readily affected by anomalous influences than others (e.g., Cornell, 2000). Jawer (2006) suggested that hypersensitivity may encompass a psi aspect, as the respondents are much more likely than controls to report having had one or more spiritual/apparitional experience. Parra (2013) observed that paranormal experients tended to be more emphatic on a number of experiences, such as aura, healing and sense of presence, than nonexperients, but they are not necessarily psychic, nor do they necessarily have other psi abilities. If healers, psychics, and mediums use emotional empathy and become absorbed in the process, often to the point of feeling that they are 'merging' with the clients, emotional empathy could facilitate pro-social motivation and the helping of others, and cognitive empathy could provide pro-social insights and help clarify the sort of help that is appropriate. In the present study, psychic/high-psi-scorers showed significantly higher levels of Emotional Comprehension and Cognitive Empathy compared to non-psychic/low-psi-scorers.

Also, the psychic group scored higher on the 'mature' factor indicating 'healthy' defenses—that is, they seems to have an adaptive style, amplified by Andrews et al. (1993) as embodying maturity, sublimation, humour, and so forth. Parra (2015) also found higher levels of paranormal experiences and mature defenses compared to individuals who did not have paranormal experiences, so that these experiences could correspond to nonpathological traits that produce changes in psychological 'homeostasis'.

In our sample, psychic/high-psi-scorers, more than non-psychic/low-psi-scorers, tended to hear voices, or experience smells or odours (Nonshared Sensory Experience), to see shapes, lights, or colours, hear noises/sounds from unexplained source, and to hear sounds more loudly, or to smell everyday odours more often than would normally be the case. They also scored higher on Magical Ideation. This result confirms Irwin's (2009) finding that psychic experience correlates positively with magical ideation. Psychics and non-psychics, however, did not differ on schizotypy or dissociation, which conflicts with Anderson's (1988, see Irwin, 2009) finding that psychic experience correlated with a measure of schizotypy. In fact, research using other measures of positive schizotypy (e.g., unusual experiences subscale of the O-LIFE, Mason, et al., 1995) has found no significant relationship with ESP (Simmonds & Fox, 2004; Simmonds & Holt, 2007). Magical Ideation has also been found to be a predictor of high ESP scoring in a laboratory experiment (Lawrence & Woodley, 1998; Parker, 2000; Parker, Grams, & Petterson, 1998; Parker & Westerlund, 1998). ESP-scoring was also related to the Perceptual Aberration Scale (see Parker, 2000), which measures distortions in body image perception, but in the present study, the difference between psychics and non-psychics was only marginal.

Finally, psychic/high-psi-scorers tended to have 'thinner' boundaries (higher scores), and reported more unusual/psychic experiences, than non-psychic/low-psi-scorers. Interestingly, these reflect boundaries relating to subjective experiences in states of consciousness, cognition and emotion, but not those associated with ways of thinking and interacting with the world. It may be that boundaries are not relevant for understanding psychic abilities, although more work is needed to delineate specifically which boundaries are relevant for different types of experience. Overall scoring on boundaries is higher among those who consider themselves to be psychic (Krippner, Wickramasekera & Tartz, 2002), and those who work as shamans or psychics (Krippner, Wickramasekera, Wickramasekera & Winstead, 1998). Sherwood and Milner (2004-2005) also found support for the idea that "the tendency to report psychic experiences might also be a key component of boundary structure" (p. 376). However, other research found no differences between mediums and controls (Roxburgh & Roe, 2011), or between healers and controls (Palmer, Simmonds-Moore & Baumann, 2006). Psychic claimants would be likely candidates with whom to test Hartmann's "continuity hypothesis" because of their familiarity with their own alterations in consciousness, and the likelihood that many of them are functioning toward the 'thin-boundaried' end of the continuum, even while awake. This has implications for problem-solving activity, as some people may regularly engage in 'thick-boundaried' problem-solving, while others produce solutions that emerge from dreams, hypnagogic and

hypnopompic imagery, reverie, and other 'thin-boundaried' conditions. Perhaps uncharacteristic was the finding that psychic/high-psi-scorers did not have significantly higher transliminality scores than non-psychic/low-psi-scorers (see Thalbourne & Storm, 2012). We point out, however, that the difference approached significance (see Table 3).

In conclusion, the typical psychic tends to be sanguine, lively, sociable, carefree, talkative, pleasure-seeking, optimistic, and leadership-oriented. Given our logistic regression analyses, however, the typical high-psi-scoring self-claimed psychic could be described as having a vivid imagination, and is a paranormal believer, having had a number of non-shared and intense anomalous experiences—it is arguable whether slight or 'thin' mental boundary (transliminality) and defense style predict membership. As far as more accurate profiling is concerned, further studies will be necessary to reach a definitive answer.

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