



53RD ANNUAL CONVENTION

ENCLOS REY - PARIS, FRANCE

JULY 22-25, 2010

ABSTRACTS OF PRESENTED PAPERS

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Program Chair**

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INTRODUCTION

On behalf of the Convention Committee I would like to welcome you to this year's Parapsychological Association Convention. I hope that you will be both stimulated by the academic content and enjoy the surroundings of L'Enclos Rey and Paris beyond. Events begin with a welcome reception on the Thursday evening and I look forward to meeting many of you then. If you are a student, you will be interested in the special student meeting which will also take place that evening.

The program consists of 30 original pieces of research from 26 different first authors across the globe. This includes 14 full papers, eleven research briefs and five poster presentations on topics pertaining to GESP research, anomalous experiences and historical cases, reflecting a rich diversity of theoretical and methodological approaches. In addition, there will be a special interest panel on anomalous experiences and mental health, a workshop on creativity and psi and an invited talk by Russell Targ, who will contemplate his journey as a psi researcher in light of his recent Outstanding Career Award. David Luke will treat us to his Presidential Address and we are delighted that Paul Devereux will be giving us a Banquet Address. Further inclusions to the program are an awards ceremony to highlight the remarkable work of selected researchers and a memorial session to commemorate the career and life of our colleague Michael Thalbourne who sadly passed away earlier this year.

Synchronizing the assimilation of this program has been quite an experience, enabling me to 'meet' and communicate with many interesting researchers and work with the esteemed Program Committee. I would like to thank the latter for their thoughtful and helpful reviews and for their academic rigor. The helpfulness of reviewers sometimes went beyond the call of duty and I am grateful for the assistance and guidance that I have received. Thanks also go to the Session Chairs who have kindly stepped in to help organize the flow of presentations and questions throughout the convention (Daryl Bem, Richard Broughton, Deborah Delanoy, Hoyt Edge, Erlendur Haraldsson, Roger Nelson, John Palmer and Jessica Utts).

Much appreciation is due to the true organizers of this convention – the members of the Convention Committee: Mario Varvoglis, Annalisa Ventola, David Luke, Renaud Evrard and Louis Sagnières who have worked relentlessly to organize our venues, accommodation, snacks and feasts, registration and countless else. I look forward to experiencing the fruits of their hard work.

Nicola Holt

PROGRAM OF EVENTS

THURSDAY 22ND JULY

Registration desk open - (Amerique Centrale)	14.00-19.00
Welcoming Reception (hosted by IMI) – (Amérique Sud)	19.30-20.30
Student Associate Gathering - (Mario é Lillo, 98 rue du Théâtre)	20.30-22.30

FRIDAY 23RD JULY

Registration desk open - (Amerique Centrale)	8.30 -17.00
Welcoming remarks – (Amerique Nord))	9.00

Session One: Retrocausal effects - (Amerique Nord)

Chair: Daryl Bem

Anomalous switching of the bistable percept of a Necker cube	<i>Dick Bierman</i>	9.10
Retro-priming and double testing	<i>Thomas Rabeyron & Caroline Watt</i>	9.40

Coffee break – (Amerique Sud)

10.10-10.40

Session Two: Psychophysiological correlates of psi and trance - (Amerique Nord)

Chair: Richard Broughton

Somatic psi: Heartrate changes reflect future events, but do these changes improve our choices?	<i>Eva Lobach & Dick Bierman</i>	10.40
Psychology and psi: including psi research questions in psychophysiological experiments on learning and decision making	<i>Eva Lobach & Dick Bierman</i>	11.10
Neuroimaging study of mediumistic trance	<i>Julio Peres, Alexander Moreira-Almeida & Andrew Newberg</i>	11.30

Session Three: Poster session - (Amerique Sud)

Performance in group telepathy experiments as related to target picture characteristics	<i>Jan Dalkvist</i>	12.00
Are there mean values and relationships between them in statistical parapsychology?	<i>Wolfgang Helfrich</i>	
Gas measurement method for the quantitative study on non-contact healing	<i>Kokubo, Hideyuki</i>	
Is psi-mediated information processed like the unattended stimulus in latent inhibition studies?	<i>Nicola Holt, Christine Simmonds-Moore & Steve Moore</i>	

Lunch break

12.30-14.00

Abstracts of Presented Papers

Session Three: Attention and psi – (Amerique Nord)

Chair: Deborah Delanoy

The attention focusing facilitation paradigm: Remote helping for meditation? A meta-analysis	<i>Stefan Schmidt</i>	14.00
Investigating precognitive influence on attentional control using eye tracking	<i>David Smith & Caroline Watt</i>	14.30

Session Four: General Extrasensory Perception (GESP) - (Amerique Nord)

Chair: John Palmer

A comparison between remote viewing and ganzfeld conditions in a precognition task	<i>Chris Roe, Callum Cooper & Hannah Martin</i>	14.50
The effects of telepathine (ayahuasca) on psi: A preliminary study in South America	<i>David Luke</i>	15.20
The impact of individual differences on normal and paranormal pattern detection	<i>Christine Simmonds-Moore</i>	15.40

Coffee break - (Amerique Sud) **16.00-16.30**

Session Five: Awards and Invited Talk by winner of the Outstanding Career Award, 2009

Parapsychological Association Awards Ceremony (Amer. Nord)	<i>David Luke</i>	16.30
Why I am absolutely convinced of the reality of psychic abilities, and why you should be, too - (Amerique Nord)	<i>Russell Targ</i>	16.45

Free time **17.30 – 19.30**

Presidential Address and Reception – (Amerique Nord) *David Luke* 19.30

SATURDAY 24TH JULY

Registration desk open (Amerique Centrale) 8.30 – 17.00

Session One: Experience and applications – (Amerique Nord)

Chair: Erlendur Haraldsson

Exploring people's experiences of telephone telepathy: A qualitative study	<i>Chris A. Roe & Lesley-Ann Smith</i>	9.00
Development of a psychokinetic experiences questionnaire	<i>Christine Simmonds-Moore, Sally Rhine Feather & Judith Gadd</i>	9.20
A scientific test of the model of pragmatic information using European cases of anomalous experiences	<i>Ian Tierney & Caroline Watt</i>	9.40
Intuitive archaeology: Why is this topic not closed?	<i>Jean-Olivier Gransard-Desmond & Alexis Champion</i>	10.00

Coffee break – (Amerique Sud) **10.20-10.50**

Session Two: Anomalous experiences and mental health panel - (Amerique Nord) 10.50

Chair: Nicola Holt

How might we manipulate anomalous experiences for mental health and transcendence?	<i>Christine Simmonds-Moore</i>
What can creativity research tell us about healthy anomalous experiencers?	<i>Nicola Holt</i>
Counseling work at the IGPP - an outline	<i>Eberhard Bauer</i>
Differential clinical practice of anomalous experiences	<i>Renaud Evrard</i>
Approaches to counseling those with anomalous experiences	<i>Stefan Schmidt</i>
Therapist/counselor attitudes to psi when counseling certain types of anomalous experience	<i>Ian Tierney</i>

Session Three: Poster session - (Amerique Sud) 12.00

Performance in group telepathy experiments as related to target picture characteristics	<i>Jan Dalkvist</i>
Are there mean values and relationships between them in statistical parapsychology?	<i>Wolfgang Helfrich</i>
Gas measurement method for the quantitative study on non-contact healing	<i>Kokubo, Hideyuki</i>
Is psi-mediated information processed like the unattended stimulus in latent inhibition studies?	<i>Nicola Holt, Christine Simmonds-Moore & Steve Moore</i>
Investigation of anomalous physiological stimulus discrimination	<i>Tim Schönwetter & Wolfgang Ambach</i>

Lunch break – 12.30-14.00

Session Four: Historical and case studies - Location

Chair: Hoyt Edge

The diva and the nobelists: When Pierre and Marie Curie studied Eusapia Palladino at the Institut Général Psychologique (1905-1908)	<i>Renaud Evrard</i>	14.00
An important subject at IMI: Jeanne Laplace	<i>Giulio Caratelli & Maria Luisa Felici</i>	14.30
Allan Kardec and the development of Spiritism: A pioneering research program in psychical experiences	<i>Alexander Moreira-Almeida & Klaus Chaves Alberto</i>	15.00
Indridason's and Swedenborg's remote description of fires in Copenhagen and Stockholm	<i>Erlendur Haraldsson</i>	15.30

Coffee break 16.00-16.30

Session Five: Workshop – (Amerique Nord)

The role of anomalous information in the work of creative people	<i>Stanley Krippner & Steven Pritzker</i>	16.30
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Group photo (Enclos Rey Garden) 17.30

Free time

17.30-19.30

Banquet –

19.30

Pavillons de Bercy, 53 Avenue des Terroirs de France, Paris 12 , 0143404181

Banquet address

Paul Devereux

SUNDAY 25TH JULY

Session One: PK and Random Event Generators - (Amerique Nord)

Chair: Roger Nelson

Effects of participant and target system lability upon PK performance using an I Ching task	<i>Chris Roe, Hannah Martin & Sophie Drennan</i>	9.00
Operational closure and PSI: Experimenting with the Triggered Random Event Generator (T.REG)	<i>Matthias Braeunig & Tilmann Faul</i>	9.30
An empathic agent system based on field consciousness	<i>Takeshi Shimizu & Masato Ishikawa</i>	10.00

Coffee break – (Amerique Sud)

10.30-11

Session Two: Geomagnetic activity and geological setting - (Amerique Nord)

Chair: Jessica Utts

Influence of geomagnetic activity on artificial intuition device performance	<i>Mark Zilberman</i>	11.00
Negative correlation of remote viewing performance with 0.025 - 0.1 Hz geomagnetic pulsations	<i>Adrian Ryan & Eugene Subbotsky</i>	11.30
The relationship between local geomagnetic activity, Tibetan Buddhist meditation and psychic awareness: Preliminary study	<i>Serena M. Roney-Dougal, Adrian Ryan & David Luke</i>	11.50
Can the geological setting of the places affect poltergeist/haunting phenomena?	<i>Maria Luisa Felici & Giulio Caratelli</i>	12.10

Session Three: In remembrance of Michael Thalbourne

12.30

Chair: John Palmer

Lunch break

12.40 -14.00

PA Business Meeting (PA Members/Affiliates Only)
(Amer.Nord)

14.00

End of convention

ABSTRACTS

Full Papers

ANOMALOUS SWITCHING OF THE BI-STABLE PERCEPT OF A NECKER CUBE

Dick J. Bierman
University of Amsterdam

Psychophysiological research has shown anomalous correlations between unconscious states reflected by physiological fluctuations and random future conditions. Where the future conditions concerned emotional and neutral events this anomalous effect has been called presentiment. In a previous study we showed that gender detection based on a picture of eyes alone was faster in the condition where this picture was followed by a complete face of the same person (congruent) compared with a condition where the eyes-only picture was followed by the face of a different person (incongruent condition). This effect was called retro-active priming. In the present research the domain of interest regarding apparent retrocausal effects is further extended to the visual experience of a so-called 'transparent' Necker cube. When a picture of this cube is presented to subjects their experience switches spontaneously between two viewpoints. In one perspective the cube is experienced as observed from 'above', in the other it is experienced as observed from below. We measured switching times from the above to the below experience. Once the subject had indicated by pressing a button that this shift had taken place the picture of the transparent cube changed into an opaque presentation of one of the two possible viewpoints. The choice of which perspective was presented, 'from above' or 'from below,' was random. This created two conditions. When the opaque view was 'from above' this corresponded to the view for which the duration was measured (congruent), the opaque view 'from below' was the incongruent condition. Arguing that in the incongruent condition the opaque view would 'retrocausally' interfere with the 'top view' for which the duration was measured we predicted that in that condition the duration would be shorter.

In a pilot study ($N = 6$) we found suggestive evidence indeed that the mean stable percept duration was dependent on which of the two opaque representations would be presented in the future, after the switch had occurred. This predicted effect was quite clear after removal of one subject who produced many outliers in the perspective switching times.

The same procedure for removal of subjects with many outliers was used in two independent confirmatory studies, one at the university of Groningen ($N = 136$) and one at the university of Amsterdam ($N = 29$). This process resulted in the removal of about 10% of the subjects. The switching-time effects found in both studies were in the same direction as in the pilot study, and the Amsterdam study was independently significant. The pooled results showed a mean difference in switching-time of 126 msec ($N = 153$, $t = 1.97$, $p = 0.026$ one-tailed). These results seem to fit in a growing database of anomalous correlations between conscious and unconscious behavior and random future conditions. It extends the domain of these anomalous correlations to other non-emotional events. Alternative possibilities, such as procedural errors, are discussed.

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OPERATIONAL CLOSURE AND PSI: EXPERIMENTING WITH THE TRIGGERED RANDOM EVENT GENERATOR (T.REG)

Matthias Braeunig & Tilmann Faul
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We are reporting here for the first time the results of a series of experiments obtained with the Triggered Random Event Generator (T.REG), an electronic device that was conceived to fully integrate the observer-participant in the generation of binary events. What sounds contradictory at first to random data generation is an attempt to “close the loop” between the subject and the environment. The operational closure (OC) is present in a trigger-feedback-loop, where the trigger is controlled by the subject’s physiological response to the outcome. Furthermore, a ‘Meaning-switch’ (M-switch) allows the participant to willfully invert parts of the binary sequence. The idea behind this explicit loop structure is that anomalous sampling may be the result of self-organization of extra-sensory information (psi). Thus the special arrangement provides a playground for psi, while the null hypothesis of ‘un-informed’ sampling is preserved.

Experiments have been conducted with 22 participants who performed in ten trials of approximately five-minute duration each. Triggers were generated with variable frequency around 1KHz modulated by the subjects’ EEG voltage measured at the forehead. Participants were asked to increase the pitch in an acoustic feedback of the cumulative deviation scores. Three independent hypotheses about the endpoints of the sequences were tested: 1) The outcome in mean and variance is compatible with chance expectation (H_0); 2) M-switch gain correlates positively with trial number, indicative of individual learning (H_L); 3) M-switch gain correlates positively with participant number, indicative of ‘morphogenetic’ learning (H_M). Further, the frequency and duration of M-switch application was analyzed to extract useful psychological variables. These were correlated with the physical outcome variables to test a hypothesis put forward by the Model of Pragmatic Information about the expected number of significant correlations (H_{MPI}).

Results did not show any indication of anomalous sampling or learning. However, subjects appeared to be generally more successful with a built-in pseudo random event generator than with the sampling from the true random states. This may be explained by the finite length of the sequences and expectancy about the outcome. Psychological reaction to up- and down- runs of the feedback was observed in M-switch behavior. The observed statistically significant increase in correlation between physical and psychological variables has to be taken with caution as it is sensitive to the choice of variables.

We discuss the results in the light of the concept of operational closure and think that it is still valuable to explore this approach further. It may be important to improve the closure on the side of the feedback providing a higher degree of integration combined with a lower sampling rate to make the loop tighter and more appealing to the subject.

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AN IMPORTANT SUBJECT AT THE INSTITUT METAPSYCHIQUE INTERNATIONAL: JEANNE LAPLACE

Giulio Caratelli & Maria Luisa Felici

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Jeanne Laplace is a psychic subject who carried out her activity at the Institut Métapsychique International (IMI) in Paris. Further understanding of Laplace brings researchers a deeper understanding of the characteristics of ESP phenomena. Since childhood, she had remarkable abilities, possibly strengthened by two ‘nervous shocks’ that occurred when she was twelve and eighteen years old. Her abilities were rather regular in their manifestation, though variable in their quality from a day to another, and they could be solicited at will.

Before her work at the IMI she had acted regularly for seven years as medium at a spiritualist circle. Then, in 1926, a reader of *Révue Métapsychique* introduced her to Eugène Osty, director of the Parisian institute (IMI). After testing Jeanne Laplace, Osty became convinced of her abilities.

To obtain the paranormal knowledge she had to feel a kind of ‘link’ with the ‘target’ person. The paranormal information occurred mainly through visions, that is, various hallucinations – vivid images that were objectified and projected seemingly outside herself on a ‘virtual screen’. These were either black and white or in color, motionless or in motion, silent or involving voices (therefore including auditory hallucinations) and more or less allegorical. Laplace also had gustatory, olfactory and tactile hallucinations. In order of importance, the receipt of paranormal information was experienced as visions and ‘impulsive words’.

Often she used objects, which were put to her disposal by the consultants, and which acted as ‘support’. According to Osty, who organized and carried out public and private séances with her for eight years, such objects helped her concentration, acting like a sort of thread, and enabling knowledge of the ‘target’ by paranormal means, irrespective of space and time.

Undoubtedly remarkable, two séances were done at the IMI in Paris with the English researcher Harry Price, who became convinced of Jeanne Laplace’s clairvoyant abilities. It is very interesting to note that during the course of an experiment carried out in 1928 with Price, Miss Laplace made some predictions regarding the future of a Dr R. J. Tylliard. She predicted his death due to a railway or car accident and that he would have just few more years to live. In actuality, nearly nine years later, Dr Tylliard died in a car accident in Australia.

Under strict controls, and with the necessary cautions, Jeanne Laplace was also studied by Henri Desoille and Eugène Osty with regard to the paranormal diagnosis of disease. These investigations had some surprising outcomes, although often her diagnoses were widely marked by many kinds of mistakes and omissions. In any case, she always gave only simple advice inviting the interested person to be visited by a specialist, without pretending to substitute the official medicine. The outcomes obtained in this field are considered to be important by the current authors because they deepen our understanding of paranormal abilities, but they are less important from the point of view of everyday medical practice. In fact, a doctor was required to check the validity of Laplace’s paranormal diagnoses and to add the precision and medical competence enabled by this professional practice.

Though she had acted previously for seven years in a spiritual circle, adapting herself to its rites and beliefs, and attributing the produced ‘communications’ to the deceased spirits, during her activity at the IMI Miss Laplace has never attributed her abilities and manifestations of paranormal knowledge to disembodied spirits, “spirits guide”, or similar entities – although in some rare moments the old habit to

refer to deceased people appeared. Nevertheless, she kept the inner conviction that paranormal knowledge had proved the possibility of survival after death.

Jeanne Laplace showed herself to be a gifted subject, one who was open to be tested by experimenters and the intrinsic aims of metapsychic research. She provided a huge quantity of reliable and heterogeneous information of paranormal origin and provided researchers with some precious and personal observations about the features and development of her abilities.

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THE DIVA AND THE NOBELISTS: WHEN PIERRE AND MARIE CURIE STUDIED EUSAPIA PALLADINO AT THE INSTITUT GÉNÉRAL PSYCHOLOGIQUE (1905-1908)

Renaud Evrard

Department of Psychology, University of Rouen, France

The study of alleged physical phenomena of the medium Eusapia Palladino by the Institut Général Psychologique (IGP) from 1905 to 1908 was an important moment in the career of the “diva of scientists” (Alvarado, 1993; Blondel, 2002). The IGP, which was created in 1900, tried to integrate psychical research into the established sciences of the day, through alliances with French scientific and political elite. Psychical research was included there as one of the various areas of psychology supported by the IGP. But the IGP had been divided since its beginning by two trends represented in the term *psychique* on the one hand and *psychologique* on the other, an issue that found resolution in the formation of specialized sections (Brower, 2005). This study of Palladino was the most important contribution to psychical research by the Groupe d’Etudes des Phénomènes Psychiques, which represented the parapsychological branch of the IGP. The experiments involved conditions that acknowledged idiosyncratic needs of the medium in terms of ecological validity (darkness, cabinet, etc.), but controls were applied through specially designed instruments such as scales, electrical sheaths that could detect movements of the legs of the table, and a number of physiological measurements. Over a three-year period, Eusapia gave forty-three sittings at the IGP and several other non-official séances for certain notables interested in studying the medium. This was a large-scale project with a specially equipped laboratory, half-public funding, and a research team composed of recognized intellectual authorities, including six Nobel laureates, many of whom were not suspected of being sympathetic to psychical science: Ballet, Bergson, Branly, Courtier, Pierre and Marie Curie, d’Arsonval, Duclaux, Langevin, Perrin, Richet, etc.

The final detailed report (Courtier, 1908) concluded ambiguously on the authenticity of the observed phenomena due to often imperfect conditions and the exposure of several minor frauds. The two major problems of this study were that it didn’t include conjurers amongst the experimenters, and that its methodology was very variable between and within the sittings. Nevertheless, many participants were individually convinced, having observed complete levitations of the table, as well as luminous and ectoplasmic phenomena. Despite contemporary criticisms, which held that the observations were mere illusions arising from suggestion or were due to cheating by the medium (Le Bon, 1911), this study took place under exceptional conditions, which gives it a special significance in the history of parapsychology. The report received an award from the Academy of Sciences in 1913 and inspired later experiments.

We reconstruct some issues of this study by discussing the previously unexplored involvement of

Pierre and Marie Curie. Several documents reveal the growing interest of Pierre Curie for parapsychology. He was one of the most diligent scientists at the eight sessions in which he seemed to have participated in 1905 and 1906. Yet he had to build his opinion on a limited number of observations. He began to apply direct controls of the medium's arms and legs but was quite doubtful of this method. He quickly developed ingenious devices to try to capture the "breath" apparently emanating from Eusapia's head and catch the "psychical force" in daylight. He observed a wide range of physical phenomena under controls he sometimes found excellent. He was especially impressed by the movement of a pedestal table whose trajectory seemed to follow intelligent authorship.

Before he died accidentally, he had entrusted his desire to focus on those studies to successfully explain the mechanisms behind these phenomena. He found this study not only scientifically legitimate, but of utmost importance. While he was skeptical about the observations of ectoplasms by Crookes and Richet – the latter being humiliated by the scandal of the villa Carmen's experiments in late 1905 (Le Maléfan, 2004) – he finally declared that his own research had confirmed their observations. Shortly before his death, the April 14th, 1906, he wrote to his friend and colleague Gouy (in Blanc, 2006, pp. 643-644; Curie's emphasis):

The result is that these phenomena really exist, and I cannot possibly doubt this any longer. It is unlikely but still a fact *impossible to deny*, after the sittings we held under perfectly controlled conditions. The medium forms some kind of fluidic members (in addition to her normal arms and legs) and these more or less shapeless members are capable of grasping or strongly pushing objects (Richet calls this *ectoplasm*).

Marie Curie was less enthusiastic about Eusapia's study but continued to support foreign psychical research by becoming honorary member of several societies. According to Youriévitich (1944, p. 23-24), a few days after her husband's death, she brought the clothes in which he had been killed to a private sitting with Eusapia. Marie Curie's initiative is surprising: did she really believe that the medium Eusapia would allow her a last communication with her late husband? Marie had nowhere confessed a belief in the afterlife, and the previous experiments with Eusapia did not have the goal to obtain evidence for survival after death. Her reaction may have been due to personal distress, which was also revealed in the diary she began at the same time, in which she addressed to her late husband for years. Nevertheless, she didn't end her participation in the research with Eusapia after this tragedy. She also wrote that she found some sittings with her very convincing and that the question of physical mediumship was of the highest interest (letter to Countess Elisabeth Greffulhe, April 16, 1906, in: Blanc, 2009, p. 645) but she seems to have remained skeptical (Heuzé, 1921).

Pierre and Marie Curie's approach is based on an epistemology that encouraged experimental exploration of anomalous interactions between the physical, the biological and the mental, which could dramatically change the face of the science of the time. Courtier (1929) integrated their observations in the form of subjective certainties separate from objective certainties, i.e. as a kind of historical and elusive evidences. "I may had become *convinced*, but not, strictly speaking, *sure* [with certitudes] based on objective evidence which would be valid for all" (Courtier, 1908, p. 563; his italics). Sometimes there are objective measures that correlate with these observations, such when the medium became heavier of the exact weight of the table that seemed levitate. But these various objective correlates are subordinate to the observations and do not confirm the paranormal hypothesis independently. As well as the photographs of complete levitation of the table does not clearly show the four legs of the table, making impossible to analyze this kind of document without analyzing its historical context.

Courtier (1929, p. 188) described the collected evidence as repeated sensory observations which are combined with a critical analysis of experiment's conditions. Thus formulated, it seems clear to Courtier that the outcome of the Eusapia study is not zero, and that it would be wrong to assume fraud in the absence of any confirming observation, and despite contrary and positive observations and considerations. Pierre Curie's subjective certainty can be integrated in this category of proof. Before and after him, many distinguished scientists were also convinced of the reality of physical phenomena of mediumship and

managed to convince others, but only those who had a personal contact with the phenomena may share their conviction. Was it due to the nature of the phenomena or to the nature of the experiments?

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INDRIDASON'S AND SWEDENBORG'S REMOTE DESCRIPTION OF FIRES IN COPENHAGEN AND STOCKHOLM: TRAVELLING CLAIRVOYANCE, REMOTE VIEWING, OR SPIRIT-COMMUNICATION?

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At a séance in Reykjavik on the evening of November 24th 1905 the medium Indridi Indridason (1883-1912) described through a drop-in-communicator speaking Danish a fire that had broken out in a factory in Copenhagen. About an hour later in the same sitting he said that the fire had been brought under control. Many persons witnessed this description and a written account was deposited with the Bishop of Iceland who was known to subscribe to the leading Danish newspaper *Politiken*. There was no telephone or telegraph communication with Iceland in 1905. News arrived by ship from Copenhagen just before Christmas. An account of a factory fire was found in the November 25th issue of the Danish newspaper. The fire had started in a factory at Store Kongensgade 63, and was brought under control in an hour as had been stated at the séance. The author checked the account in *Politiken* and examined how frequent fires were in Copenhagen in 1905 that were large enough to be reported. During two weeks prior and two weeks after November 24th there were three additional fires. Only one of these fires was in the late evening, only one in a factory and that fire caused the most damage. The other fires were quite minor.

At the sitting on November 24th 1905, the Danish communicator gave his name as Jensen and his profession as a manufacturer. The Experimental Society was founded to investigate Indridason's mediumship (Gissurarson & Haraldsson, 1989; Hannesson, 1924). Minute books were kept of their séances which took place from 1904 to 1909. They were lost for over half a century, until two of them unexpectedly turned up a few years ago. They are now kept in the manuscript department of the National Library in Reykjavik. In one of them it is recorded that on December 11th 1905, Jensen appeared again and the sitters questioned him. He responds that his full name is Emil Jensen, that he was unmarried and had no children, died not so young, had brothers and sisters, and that they are still living. No attempt was ever made to find out if manufacturer Jensen had been a real person and could be identified.

The author searched for him in Danish archives and census reports. One, and only one, Emil Jensen, who was a manufacturer, turned up in records from 1890. He lived at Store Kongensgade 67, the second house along from the fire on Store Kongensgade 63. Further searches showed that his father had run a shop or a company (F. Jensen og Sön) at Store Kongensgade 40 for thirty years. Emil Jensen had lived all his life on Store Kongensgade or in adjacent streets.

Records show that the manufacturer Emil Jensen died in 1898 at the age of fifty and was unmarried. He had four sisters and two brothers. The first died in 1908 and the last in 1936, hence they were all alive in December of 1905, as he had stated in the sitting on December 11th. In the document that describes how his estate was dissolved after his death, it is stated that he had no children. Thereby everything that the communicator Emil Jensen had revealed about himself on December 11th has been verified. Could there be a normal explanation of the case? Could Indridason have known about Emil Jensen or his

family? No evidence is found for that. No obituary was published in Danish newspapers about Emil Jensen. Besides, Indridi was only fifteen when Emil Jensen died and living in a remote part of Iceland, whilst Emil Jensen was in far away in Copenhagen.

It is rare to find a case that can be investigated and verified more than a century after it occurred because new documents turn up, in this case long-lost records of the sittings. They give interesting new insight into the mediumship of Indridi Indridason, and a detailed verifiable account of a remarkable mental phenomenon. Until now Indridason has been primarily known for his physical phenomena ranging from levitations of himself to movements of musical instruments, which were being played upon as if by invisible hands, to light phenomena, and direct voices singing loudly together (Gissurarson & Haraldsson, 1989; Hannesson, 1924).

The unexpected finding that Jensen lived close to Store Kongensgade 63 adds a striking similarity to the famous case of Emanuel Swedenborg who described in Gothenburg in 1759 a fire that raged near his home in Stockholm. The Indridason/Jensen case has the advantage over the Swedenborg case that it is much better documented. These two historical cases bear witness to extraordinary awareness of events taking place at great distances. Both display the importance of motivational factors as these events were highly relevant to the persons involved. Furthermore, the Indridason case opens up the important question, who is the percipient, the living Indridason or the deceased Jensen? Is this a case of travelling clairvoyance, remote viewing, or spirit-communication? The weight of the motivational factor tips the scale towards Emil Jensen rather than the medium Indridi Indridason.

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SOMATIC PSI: HEART RATE CHANGES REFLECT FUTURE EVENTS, BUT DO THESE CHANGES IMPROVE OUR CHOICES?

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We define ‘somatic psi’ as changes in physiological processes that are associated with events that are distant in (future) time, distant in place, or distant in both. There are various types of somatic psi, such as evidence from: DMILS (Direct Mental Interaction with Living Systems) studies, where correlations are found between somebody’s intentions (to influence) and the physiology of someone else in a different room; or presentiment studies, where unpredictable, often emotionally charged future events are associated with physiological changes in people who sit passively in a chair. The present study focuses on somatic psi in a decision making context.

Participants ($N = 36$) with and without yoga/meditation experience guessed which one of two sequentially presented pictures would later turn out to be the target, while heart rate was being registered continuously. The study aimed to explore whether any heart rate changes for targets and non-targets (a type of somatic psi) would be used in the actual decision making process and looked for mediating factors. Included were gender, yoga and meditation experience, interoception (sensitivity to bodily processes) as measured with a heartbeat detection task, absorption (Absorption Scale, Tellegen & Atkinson, 1974) and intuition (Human Information Processing Survey, Taggart & Valenzi, 1990).

Results replicated those earlier reported by Tressoldi, Martinelli, Massaccesi, and Sartori (2005), showing that heart rate was increased while looking at the picture that would later be shown to be the

target. Results suggested that, especially for women, these heart rate changes correlated with correct choices, but there was no evidence that these differences were actually used in their conscious choices. Although participants with more yoga and meditation experience did not have more hits, they showed marginally larger heart rate differences between target and non-target pictures. This study found no relationship between the personality factors (absorption, intuition, interoception) and our measure of psi, and neither were these personality factors associated with yoga or meditation experience.

A potentially promising theoretical approach which to interpret these results is Bierman's Consciousness Induced Restoration of Time-Symmetry (CIRTS), which assumes that so-called 'coherent' states of consciousness may create circumstances that allow time-symmetry of physical processes (Bierman, 2008). EEGs of advanced meditators have shown sustained synchronous firing, which may be an indication of the type of coherence that is proposed by CIRTS. Future research should further explore the relationship between different types of meditative states, EEG synchrony and various manifestations of somatic psi.

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ALLAN KARDEC AND THE DEVELOPMENT OF SPIRITISM: A PIONEERING RESEARCH PROGRAM IN PSYCHICAL EXPERIENCES

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The French educator Allan Kardec (1804-1869) was one of the first researchers to propose the scientific investigation of psychical experiences and was an influential scholar in Europe during the second half of 19th Century. However, there is a long history of imprecise factual information and misunderstandings concerning Kardec's work with psychical experiences. The current paper is a continuation of a research enquiry about Kardec's research methods. Intending to grasp more directly Kardec's ideas and methods, and not others opinions about him, we focused this paper, as much as possible, on primary sources, that is, Kardec's own writings. To compose this article the authors carefully read all of Kardec's available works: his books and the twelve volumes of *Revue Spirit (Spiritist Journal)*, a monthly journal that he edited and published from 1858 until his death in 1869. This paper explores how Kardec actually worked on his research program in trying to obtain valid information regarding spirits and the spiritual world, i.e. examining his empirical approach and how he raised and tested hypotheses. Although it is widely accepted by spiritists and many academic authors, Kardec was not a mere "compiler" or "codifier" of mediumistic messages. He developed a much more sophisticated research program. Kardec often stated the need for a wide and diversified empirical approach. He stressed that a researcher should try to collect all kinds of phenomena that could be related to one's subject of study. Several times Kardec compared mediums to microscopes or telescopes, i.e. being a way to observe a world that cannot be detected using the naked eye. To enlarge the empirical basis of observation he founded the Parisian Society of Spiritist Studies where he developed most of his observations. But he also personally studied other mediums in Paris, and in dozens of cities in France, Belgium and Switzerland (Kardec 1864b; 1865b). During his field research he tried to observe all kinds of mediumistic manifestations, from different sorts of mediums.

During Kardec's last 15 years, in which he devoted himself full-time to the investigation of psychical experiences, mainly mediumship, he developed a worldwide network of collaborators that exchanged reports of mediumistic studies with him. He received thousands of visitors from several countries who were looking for information regarding Spiritism, but many also brought reports of their studies with mediums that were shared at the Parisian Society of Spiritist Studies. Kardec received reports of psychical phenomena from hundreds of spiritist groups all over the world. Based on all those observations, he developed a research program, including a comprehensive theory that he called "Spiritism". Kardec highlighted that in trying to explain some phenomena one should always look for a conventional explanation. If the anomalous phenomena was attested and could not be explained by conventional theories, it would be necessary to look for a hypothesis to make sense of the empirical observation. The source for these theories could be Kardec himself, any other living person, or spirits that communicated their ideas through mediums. Kardec did not use the appeal to authority; he did not justify a theory based on its source, but on its logical consistency and empirical support. Kardec proposed several criteria to test a theory: logic and internal consistency; well grounded scientific knowledge; support by empirical evidence; absence of falsifications; theoretical simplicity; and comprehensiveness. More studies based on in-depth studies of primary sources are urgently needed to provide a better understanding of Kardec's research program and the construction of Spiritism.

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NEUROIMAGING STUDY OF MEDIUMISTIC TRANCE

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Religious manifestations often involve dissociative states but little research has been done on the mediumistic experience, in which an individual (the medium) is believed to be in communication with, or under the control of, the personality of a deceased person. We investigated whether psychography – writing of the soul – is associated with specific alterations in cerebral activity. Ten healthy Brazilian psychographers, free of mental disorders, were examined using single photon emission computed tomography (SPECT) during psychography and while writing an original text in a non-trance state. Five of those mediums were novice and five had substantial experience ranging from 2 to 40 years of psychography. The volunteers studied enjoyed a good quality of life and were well-adjusted in terms of their family, social and professional lives. The mediums that participated in this study did not know each other before the study, did not earn money from mediumship (all of them had regular jobs or were retired) and did not receive any financial incentive to participate. All mediums, one at a time, performed psychography for the SPECT study in the same conditions, in a quiet, dimly lit room of the laboratory, where exams were taken. Although they were semi-conscious during psychography, the written content was coherent and understandable. Our hypotheses were confirmed among the novice psychographers, since results showed that novices' regional cerebral blood flow (rCBF) in several brain areas (particularly in the left culmen, left hippocampus, left inferior occipital gyrus, left anterior cingulate, right superior temporal gyrus and right precentral gyrus) during psychography were greater than during normal (non-trance) writing. However, experienced mediums, contrary to our hypothesis, showed consistently

decreased rCBF in these regions during psychography compared to control writing. The written content produced by volunteers during the both types of task – with or without mediumistic trance – was original, meaning never written before. Results showed decreased activity in several cognitive-processing regions despite the trance-state text being more complex than the control-task text, which is consistent with the notion of automatic writing.

We have drawn critical methodological lessons from this study that will be shared during the presentation in order to encourage further rigorous research in this field. This kind of mediumistic study requires us to bear in mind several methodological challenges concerning how to make volunteers feel at home during laboratorial procedures, as follows: (1) Having a good qualitative interview beforehand: “what is needed for the phenomenon to occur?” – volunteers in general want to be studied, not tested; (2) Respecting the volunteers’ suggestions and showing them that their opinions are important. For instance, in our study the volunteers asked for both near and distant group support during psychography; (3) Theory of mind: deconstructing the fantasy of the volunteers concerning the researchers’ expectations: “Your experience will be welcome just as it is!”; Minimizing expectations and dissolving fears of not performing well: “if nothing happens we can do further scans”; (4) Familiarizing volunteers with potential anxiety/distracting effects (hospital, scans, blood samples, injections, etc.) and starting the study with the most confident volunteers, who naturally transmit confidence to the group; (5) Avoiding methods that jeopardize the subjective experience. Concerning neuroimaging methods, SPECT, despite its low resolution, preserves the setting where the experience takes place and imaging acquisition occurs soon afterwards.

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RETRO-PRIMING AND DOUBLE TESTING

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In previous research (Rabeyron & Watt, 2010), we conducted a retro-priming study in which the response times of 162 participants were measured. In this first study, results on the retro-priming task were not significant ($r = 0.11$, ns). Nevertheless, we obtained a significant result with two sub-groups (students and male participants) and we tried to replicate these findings in this second study. The aim of this new research was more generally to work only with the participants who had the strongest retro-priming effect during the first study, in order to see if we were able to replicate the effect and select in this way “gifted” psi subjects. The objective was also to find correlations between psychological characteristics (paranormal experiences, mental health, mental boundaries, trauma and negative life events) and retro-priming results for the “best” participants. The retro-priming effect was also compared to performance on a classical priming task.

The retro-priming software used here was a version developed by Daryl Bem (2008), but we used pictures as primes instead of words. The response times of participants were measured in order to see if they were influenced by a prime (a pleasant or unpleasant emotional picture) which they would see not before but *after* the pleasant or unpleasant word. Participants were shown a word on each of 64 trials and were asked to press one of two keys on the keyboard as quickly as they could, to indicate whether the word was pleasant or unpleasant. The participant’s response time in making this judgment was the major dependent variable, and the difference in mean response times between incongruent (pleasant -

unpleasant) and congruent trials (pleasant - pleasant or unpleasant - unpleasant) was the index of a retro-priming effect, with positive differences denoting faster responses to congruent trials.

For this new study, 39 of the “best” participants from the first study were selected and only 28 were available to come back to the laboratory. The results, for the whole group, on the retro-priming task, were negative and non-significant ($es = -.25$, ns) but the results were significant on the priming task ($es = .63$, $p < .001$). We also found a negative and significant correlation between retro-priming results of the first and second study ($r = -.46$, $p < 0.05$) and positive but non-significant correlation between priming results of the first and second study ($r = .19$, ns). The correlation between priming and retro-priming results was non-significant ($r = -.045$, ns). We obtained overall negative effects on retro-priming results for all the groups (male, female, student, whole) but ten participants were found to have positive results on the two retro-priming studies. No specific psychological variables were found for these ten participants compared to the other participants.

Several hypotheses were considered in explaining these results. First of all, a skeptical hypothesis was proposed, in which the results from the first study were effects of randomness alone; this would explain why we had no significant result with the “best” participants. Several possible reasons why the retro-priming protocol may not have been efficient enough to get a significant result were also detailed. Finally, several interpretations about the results (using the Model of Pragmatic Information and the Consciousness Induced Restoration of Time-Symmetry) were also proposed in order to try to understand our negative results and more generally problems of reproducibility in psi research.

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A COMPARISON BETWEEN REMOTE VIEWING AND GANZFELD CONDITIONS IN A PRECOGNITION TASK¹

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Some of the early research on remote viewing has been criticized, particularly with respect to potential problems with the randomization and editing of transcripts that may have left cues to the order in which sites served as targets (Marks & Kamman, 1980). These concerns have been addressed in later, successful replications (e.g., Schlitz & Gruber, 1980; Schlitz & Haight, 1984; see also Schlitz & Gruber, 1981), which took great care to ensure that neither the order of target selection nor of the transcripts could be inferred from material they contained, but part of that solution involves either editing the transcripts, which itself can be grounds for criticism (e.g., Marks & Kamman, 1980, p. 16), or deferring feedback about target identities until the end of the series, which may be demotivating (see, e.g., Tart, 2007). These concerns only apply to studies in which the same participant serves as viewer for a number of trials in the series, and thus is potentially able to refer in their transcripts to earlier targets and later planned sessions. This would not be possible if one were to adopt a design in which a larger number of participants contributed just one trial each.

Militating against the use of a larger sample of participants is the difficulty in finding a sufficient

¹ We would like to thank the Society for Psychical Research's Research Grants Committee for their kind financial support for this project.

number of able participants; for example, Utts (1996) estimated that only around 1% of those screened were suitable for RV work. In an earlier study (Roe & Flint, 2007) we suggested that this might be overcome if an induction procedure could be identified that facilitated the performance of novice participants. One such candidate is the ganzfeld induction procedure. Roe and Flint (2007) conducted a remote viewing study that incorporated ganzfeld stimulation and reported 12 binary hits across 14 trials, which gave a combined sum of ranks that was significant (SOR = 42, $p = .008$), suggesting that this approach might overcome the weaknesses just outlined.

However, it was not clear that this successful outcome was a consequence of incorporating a ganzfeld protocol for novice participants, since there was no comparison condition in which participants attempted to generate impressions about a target location without the assistance of ganzfeld stimulation. The present study, therefore, was intended to compare performance under remote viewing and ganzfeld conditions using a repeated measures design. We were also able to address concerns about possible judging biases in Roe and Flint's (2007) study by incorporating a much wider range of target locations and a larger number of trials ($N = 40$), and to improve precautions against fraud and sensory leakage by adopting a precognitive design. Finally, we extended the range of possible individual difference covariates of performance by including measures of personal psi experience, belief in the paranormal, practice of a mental discipline, Feeling-Perceiving personality type, extraversion and self-reported creativity; subjective reactions to ganzfeld stimulation were assessed using Pekala's (1991) *Phenomenology of Consciousness Inventory* (PCI).

A convenience sample of 40 volunteers (28F, 12M; age range 18-54 years) completed two precognitive remote viewing trials, one in an ordinary waking state (after Subbotky & Ryan, 2009) and one involving ganzfeld stimulation. The order of conditions was counterbalanced across participants. In both conditions they were instructed to generate impressions that would relate to a geographical location that they would later be shown. During the waking condition participants were provided with unique but arbitrary coordinates that specified the target and then drew an ideogram before producing a list of adjectives that described features of the site (such as colors, tastes and smells) and finally made sketches of the site. During the ganzfeld condition participants listened to relaxation instructions that included the suggestion that they would experience spontaneous imagery associated with their target location. The participant's experimenter (PE) produced a written record of their mentation. After 35 minutes of ganzfeld stimulation participants completed the PCI.

Towards the end of a trial a second experimenter, responsible for the target selection and presentation (Target Experimenter: TE) randomly selected a location from among a pool of 20 (5 sets of 4 sites) using the random function in Excel. The location was set up in TE's office using Google Earth. On completion of a trial, PE photocopied the participant's description of the target and gave the copy to TE for safekeeping before being informed of the target identity. PE then brought the participant to TE's office to view and interact with the target location using Google Earth. This process was repeated for the second trial using a second target pool consisting of a further 20 locations.

An independent judge was provided with participants' descriptions of the target sites along with information about which set the target came from. The four locations in that set were rated for similarity on a 0-99 scale and rank ordered. As with previous research by the first author, the primary outcome measure was pre-specified to be sum of ranks. By this measure, performance in the ganzfeld condition was significantly better than chance ($z = 1.768$, $p = .038$: HR = 35%) and performance in the remote viewing condition was suggestively better than chance ($z = 1.627$, $p = .052$: HR = 30%), allowing us to reject the null hypothesis. Performance was not significantly related to personality and individual difference measures. However, 3 of the 12 sub-dimensions of the PCI did correlate significantly with ganzfeld performance, with higher z-scores for target sites being associated with greater absorption in their subjective experience, lower physiological arousal and less internal dialogue. Associations with other sub-dimensions were small and did not approach significance.

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EFFECTS OF PARTICIPANT AND TARGET SYSTEM LABILITY UPON PK PERFORMANCE USING AN I CHING TASK²

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Relatively few parapsychological experiments investigating micro-PK effects have been designed to consider psychological or individual differences factors, and those variables that have been considered have been subject to too few replications to give a clear indication of which persons may perform best under which conditions (Gissurason & Morris, 1991; Roe, 2001). Previous research by the first author discovered and replicated an interaction effect between an individual differences factor, participant lability, and a situational factor, target system lability (Holt & Roe, 2006; Roe & Holt, 2006). The present study was designed to conceptually replicate that finding using a novel task so as to control for possible artifacts due to the computer program or task used there. An alternative task was built around the I Ching divination procedure, which it was felt retained important characteristics of being personally relevant for the participant and intuitively straightforward to understand. Methodological weaknesses in previous I Ching experiments were addressed here, in particular by automating the I Ching casting and by having participants rate all possible hexagram outcomes for applicability using the Q-sort method. An opportunity sample of 34 participants completed a battery of measures used to construct a metric of lability, along with a measure of absorption and decided upon a personal question that the I Ching could help with. Participants were run individually and completed a Q-sort of all 64 hexagram descriptions based on their applicability to their question. Once completed they cast three hexagrams using a computer based program that used a live random number generator (Live), the pseudorandom function of the computer (Pseudo) and a predetermined list of random numbers derived from published tables (Table). The order of conditions was randomized across participants, who remained blind as to the source of randomness in each case. The Q-sort positions were used to rate the applicability of the selected hexagrams. Although the general pattern of performance was in line with prediction, with the highest average ratings awarded to hexagrams selected by the most labile Live method, next highest for the moderately labile Pseudo method and worst ratings for the most stabile Table method, the mean shifts were small and non-significant ($F_{2,58} = .571, p = .568$). Similarly, although the highest overall performance was achieved by the most labile participant group, an intermediate level of performance was recorded by the intermediate group and worst performance was by the stabile group, the modest differences were not significant ($F_{2,29} = .099, p = .906$). Therefore, despite the pattern of performance being superficially similar to that reported in previous studies, this experiment was not able to replicate the interaction between participant and target system lability ($F_{4,58} = .896, p = .473$). Possible causes for this failure to replicate are considered, including that the original studies' findings reflect Type I errors, and that the sampling method was insufficiently sensitive to belief and expectancy factors. Suggestions are made for future research, particularly with respect to identifying variables that might have contributed to the unexpectedly large variance in scores due to 'error'.

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THE ATTENTION FOCUSING FACILITATION PARADIGM: REMOTE HELPING FOR MEDITATION? A META-ANALYSIS

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The attention focusing facilitation experiment operationalizes the question whether one participant can help remotely another participant in an attention task.

One participant has to focus his or her attention on a candle contained in a translucent glass holder. Whenever s/he notices that his or her mind is wandering s/he is asked to return with his or her attention to the candle and to press a button. The frequency of button presses within a certain time interval is an indicator of mental distraction and serves as a behavioral dependent variable. A second participant is located in a distant and isolated room. No normal means of communication are possible between the two participants. This second person acts as a 'remote helper'. The helper has a monitor which displays either one of the two experimental conditions, i.e. 'Control' or 'Help'. During 'Help' periods the helper is asked to focus his or her own attention on a similar candle and to maintain at the same time an intention for the distant participant to focus well on his or her object. During control periods the helper is asked to occupy his or her mind with other matters and should not think about the experiment.

Research of the relevant literature as well as personal communication with the active researchers involved yielded twelve such studies with almost identical design. They were conducted between 1993 and 2006 and a meta-analysis on this data set was performed. Unpublished studies were included in the analysis. One study was not eligible due to an artifact identified by the original author. Studies were coded and result parameters (N , t -values, p -values) were extracted. For each study an effect-size d for the difference between control and experimental condition was calculated. These effect sizes were combined by a weighted fixed effects model. Overall we found for 11 eligible experiments with 576 single sessions an effect size of $d = 0.11$ with $p = .009$. Regarding study quality the sample of 11 studies can be separated into two larger groups and into two single studies. Separate analyses of the two larger subgroups showed more or less the same picture than the whole sample, none of these subgroups was solely responsible for the overall effect size or the amount unexplained variance. Thus it can be assumed that study quality is not a significant moderator.

The comparison of this finding with a meta-analysis on EDA-DMILS studies as well as remote staring studies applying electrodermal activity as dependent variable yielded almost identical results. The close similarity of these results can be regarded as mutual independent confirmation of each of the single meta-analyses. Therefore it can be concluded that the three experimental designs are likely to test the same effect of distant intentionality. The operationalization of the attention focusing facilitation experiment (i.e. sustained attention on an object) is very close to a standard meditation procedure. Thus we can furthermore assume that group meditation or directed helping of other meditation supports the ability to stay concentrated. We call this effect *sangha* effect which is the Buddhist notion for meditation groups.

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AN EMPATHIC AGENT SYSTEM BASED ON FIELD CONSCIOUSNESS

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Is the development of a human-like agent (machine, robot, or PC software) with real emotions or empathy a possibility? Based on studies within the domain of field random-event generators and random-number generators (REG and RNG, respectively), which report that the outputs of RNGs demonstrated statistical biases when group consciousness was evoked by certain major events (Nelson et al., 2002), we created an emotional expression display system using a physical RNG.

Although several hypotheses have been proposed to explain the bias in RNG outputs, group emotion remains one of the dominant variables. A system that expressed emotions corresponding to field consciousness would be able to laugh, cry or show anger, depending on the group emotions evoked by such events as a comedy or tragedy.

Emotional expression system: In psychology, human facial expressions are categorized primarily in terms of boredom, happiness, surprise, fear, anger, disgust, and sadness (Russell & Bullock, 1985). Using non-metric multi-dimensional scaling (MDS) the facial expressions corresponding to these emotional categories have been plotted on two-dimensional space. Although some studies have differed with respect to the second axis, the first factor has generally been interpreted as "Pleasure-Displeasure" and the second as "Arousal". We explored the way in which these two axes correspond to statistics derived from RNG outputs.

We developed this system using software produced by the FDK Corporation that draws pictures of faces as field emotions using physical RNG, RPG 102/105 hardware. This system generates 512-bit random numbers, calculates the sum of bits produced in a second, and standardizes this value in terms of z -scores (an approximately normal distribution with an expected mean of 256). The system next calculates Stouffer's Z and Chi -square scores in real time using data from the most recent 600 seconds (ten minutes).

Pleasure-Displeasure: Stouffer's z -scores, derived from the sum of the bits produced within ten minutes, are assigned to the first axis. Our system displays faces reflecting the experience of pleasure when Stouffer's z -scores increase and faces reflecting the experience of displeasure when these scores decrease. Although this assignment is partially different from the results of previous studies (Blasband, 2000; Lumsden-Cook, 2005a; 2005b), outputs of the RNG would be related to expectation or the hypotheses of researchers. The model is more or less based on our hypothesis.

Arousal: Previous field REG/RNG studies have reported that high chi -square values emerge when many people focus on the same event, such as the Olympics games, a terrifying disaster, and events that are covered by the mass media (Radin, 1996). Thus, our system assigns chi -square values to the second axis. Expressions of surprise or strong interest are displayed when the chi -squares are higher than expected, whereas relaxed or bored expressions are displayed when these statistics are lower than expected.

This system produces nine types of faces that correspond to the two statistical measures. One, the default setting, is an emotionless face. When the total z -score derived from the two kinds of z -scores (Stouffer's Z and the z -score calculated from the chi -squares) is greater than the threshold level (total z -scores >1.00), the system displays the appropriate emotional face based on the two dimensional assignment (these assignments can be easily changed for the purpose of control experiments).

Purposes: Our system can be used in those field REG/RNG experiments in which group emotion arises in the context of comedy performances, funerals, and sports events. It can also be applied to PK experiments in which participants imagine an emotional face or an emotion itself. In addition, experiments on non-intentional PK using psychological measures can test correlations between the frequency with which each face appears and the emotions of participants.

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INFLUENCE OF GEOMAGNETIC ACTIVITY ON ARTIFICIAL INTUITION DEVICE PERFORMANCE

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Multiple publications show that many psychological and parapsychological phenomena correlate with geomagnetic activity. A similar link with geomagnetic activity was also detected for the Artificial Intuition Device. The Artificial Intuition Device (AID) employs a hardware solution to the problem of Artificial Intuition and replicates some predictive abilities of human intuition on specially designed scientific equipment. During the public test of the Artificial Intuition Device started in 2008, the device was programmed to generate and post lottery predictions on the Internet *3 hours in advance* of a daily lottery draw (web page: www.intuitiontester.com/summary.html). To make testing 100% independent, these predictions were also downloaded and recorded onto an independent computer at the Anomalistic Psychology Research Unit located at the Goldsmiths College of London University (UK) before a daily lottery draw. Analysis of accumulated statistics shows that AID is able to generate profit and that its performance depends on geomagnetic activity (GA). Both observations “AID works better on the geomagnetic-quiet days” and “AID works better when geomagnetic activity decreases”, which were detected during the private phase of this research, the results of which were published in 2008, were confirmed during this public testing period. Below is summary of results.

a) The separation of all predictions into two almost equal samples of days with an Ap index of geomagnetic activity $Ap < 4$ and $Ap \geq 4$ produced samples with entirely different profit and Return on Investment (ROI). The 298 geomagnetic-quiet days with $Ap < 4$ produced ROI equal to +20.8% and generated profit of \$930. (As per the null hypothesis the ROI should be -10.0% and loss should be -\$447.) In contrast, the 279 days with increased geomagnetic activity ($Ap > =4$) produced a negative ROI of -17.6% and a loss of \$735.

b) AID performance is related to geomagnetic activity changes across days. On the 262 days when the Ap-index was less than the Ap-index of the previous day AID produced a ROI of +26% and generated profit of \$1,020. In contrast, on the 315 days when the Ap-index was greater or equal to the Ap-index of the previous day AID produced a ROI of -17.5% and a loss of \$825.

c) AID performance is also strongly related to geomagnetic activity changes within each day. On days when geomagnetic activity was decreasing AID produced a ROI of +53.3% and a profit of \$2,295. In contrast, when geomagnetic activity was increasing during the day AID produced a ROI of -48.3% and a loss of \$2,100.

The influence of geomagnetic activity changes within the day on AID performance was also found in data collected prior to the public test phase. On the days with decreasing geomagnetic activity the

Abstracts of Presented Papers

Artificial Intuition Device has consistently (in all years: 2006-2009) generated a ROI above 40% and a profit above \$1,000 (instead of losses as per the null hypothesis).

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ABSTRACTS

Research Briefs

CAN THE GEOLOGICAL SETTING OF THE PLACES AFFECT POLTERGEIST/HAUNTING PHENOMENA?

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The starting point for this research, begun about 20 years ago, was some papers by the English researcher G. W. Lambert, published during the 1950s and 60s. In particular, Lambert, in some areas of Great Britain and other countries, observed a meaningful correspondence between cases of poltergeist/haunting and underground water flow, coastlines or estuaries, characterized by strong tides. Therefore, he suggested that meteorological conditions, especially periods of rain, with a huge accumulation of water, anomalous hydric pressure and with little telluric movement, were sufficient to move objects and cause uncommon noises and bangs in houses. Also, some geological and geophysical patterns could favor the occurrence of such phenomena: earth tremors, subterranean rivers flowing under houses and tending to find their way along junctions between different strata, would cause strange noises, bangs, shaking of objects and other effects. According to Lambert's hypothesis, people living in such houses and "influenced" by such effects, would probably "enrich" events – in good faith – with the telling of other uncommon phenomena, for example, "feelings of presences", hauntings, and so on (Lambert, 1955; 1956; 1958; 1959; 1960; 1961; 1964).

In particular, Lambert observed that many haunted houses of London were situated near underground water layers. After a careful analysis of the available and heterogeneous data, Lambert concluded that anomalous quantities of water, during particularly rainy seasons, could cause telluric micromovements, which may lead to occurrences of poltergeists (Lambert, 1960). Criticisms of Lambert's theory came from Dingwall and Hall (1958) and Cornell and Gauld (1961).

Dingwall and Hall (1958, p. 106) stated that Lambert's theory is valid only in relation to the small displacements and shaking of objects, or auditory phenomena, but not for the full range of poltergeist phenomena. If the movement of a house was violent enough to produce poltergeist effects, the building would be wrecked during the outbreak. We add that such effects would be evident on all floors and apartments of the building, not just in one apartment, and wetness would be also visible along the walls.

Cornell and Gauld (1961) wrote a paper in which they criticized Lambert's theory, known as the Geophysical Theory (Lambert, 1959), in which he considered the influence of earth tremors, floods and drought related to occurrences of Scottish poltergeists/hauntings, claiming that it could explain only a very small amount of cases. Lambert replied (1961) to such critics, claiming that the Geophysical Theory was an attempt to explain a number of otherwise unaccountable cases in the physical world, due to an unusual conjunction of events.

One of the lines of our parapsychological research has been and still is the constant attention to possible environmental, geophysical, geological and hydrogeological factors that can be correlated with reports of poltergeists/hauntings.

In 2002 we presented a research brief at the 45th Annual Convention of Parapsychological Association in Paris about the "localization" of poltergeist/haunting cases (33 in the whole) in Rome. We noticed, in fact, that most of cases were aligned along some direction or they were close to each other. We thought that perhaps some environmental variables could affect poltergeists and hauntings (Caratelli & Felici, 2002). So, we decided to analyze further the available events for the town of Rome, 37 cases in total (the previous 33 plus 4 new cases) according to their Municipality of occurrence, the prevailing lithology of the places where the events occurred and the presence of natural underground waters. In our results we

obtained some particular findings: most cases were in the First Municipality where the prevailing lithology indicates alluvium (that is silts, gravels, sands, also with an argillaceous component) as the commonest layer of rock in this area. Out of the 37 cases, underground water tables and courses flow under the street where the event took place in 10 cases, and in 15 cases underground waters flow just near the street under which the event occurred. In the remaining 12 cases, there is no evidence of water layers in the data from drillings, but the presence of water cannot for this be excluded.

Although we found a pattern similar to the one that emerged from Lambert's research on the town of London, that is poltergeist reports aligned along the course of London's underground rivers and water tables, we have to observe that it is very difficult not to find an underground course in Rome, as the town is very rich in this precious resource. This feature depends on its geological setting. The results obtained thus far in ours and similar research (poltergeists/hauntings clustered in the First Municipality and alluvium as prevailing lithology) may be a coincidence and/or unrepresentative, due to the fact that they considered just a few cases and that water is everywhere under the town of Rome. Nevertheless, we cannot exclude the role of water in poltergeist and haunting cases. Such phenomena might have a multifactorial origin. Water would create a high electromagnetic field, able to influence some parts of the cerebral apparatus, for example the temporal lobe or the pineal gland or other "psi" organs, and affect somehow the ability of particular sensitive people to sense strange feelings, experience hauntings or cause poltergeists. Such a field would be increased in particular geological conditions. Water would then be a variable that interacts with other variables, rather than being solely responsible for cases of poltergeists or hauntings.

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INTUITIVE ARCHAEOLOGY: WHY IS THIS TOPIC NOT CLOSED?

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Intuitive (or psychic) archaeology seems a good way to widen the archaeologist's tools. Since 2006 a French team has been pursuing a Remote Viewing (RV) based program: *Time-Machine* (TM). Its goal is to study non-local consciousness applied to archaeology, from both theoretical (literature reviews and evaluation) and practical (research with the RV tool and its evaluation) points of view. The purposes of this paper are: by taking an archaeological point of view, to present the arguments and counter-arguments for the use of such a tool as intuitive archaeology; to introduce the TM program and one of its projects: the PA05 project (Man-Museum project – MMP); and to consider the stakes for both archaeology and parapsychology.

If the history of intuitive archaeology (from Bligh Bond to Emerson and to Schwartz) has provided evidence for the efficient use of psi abilities in archaeology (parapsychology being in charge of the proof of the existence of the psi phenomena), this history also pointed out how isolated the researchers involved in this field are. The most dramatic consequence of this is the lack of practical knowledge transmission; knowledge is too often limited to the publication of results (except for Schwartz's work).

Initiated by Gransard-Desmond, an archaeologist, with Champion's support, a computer scientist, the TM program is planned to be developed for a 10-year-period. At the same time, our project aims to improve the knowledge of intuitive archaeology, especially questioning its benefits, but considering its limits and pitfalls, with the hope of changing the general attitude towards psi and its practitioners.

To fulfill these objectives, the program is deliberately directed towards applied research with a systematic approach. Covering both the results and the conditions required to produce them, it aims to establish a “good practice guide” to facilitate the integration of a RV-based tool into archaeological research teams. Work is divided between a critical review of the literature, production of new data for hypothesis testing, and epistemological reflection. The alliance of theory and application will allow us to submit previously published works to a critical evaluation and to highlight the difficulties that did not appear in these publications. At the end of 2009, besides training sessions, six projects were planned for the TM program. From these six, we will present the MMP, which is completed. This RV project did not deal with location but with artifact analysis and took place in full double-blind conditions. It was the first project sponsored by an academic archaeologist (Érik Gonthier), who was not part of the team. Érik Gonthier is a member of the prehistory department of the Muséum National d’Histoire Naturelle in Paris, France (UMR 7194). In partnership with his laboratory, the objective was to provide Gonthier with a wide range of information about the target (an artifact he currently studies) – information gained by remote viewing. The sessions and the analysis took place between June, 2008 and June, 2009 and involved a team of nine people, among which were five remote viewers. The results were evaluated by Gonthier in October, 2009.

For the MMP, the RV technique used was Natural Remote Viewing (NRV). The viewers had already worked on similar projects and had provided evidence of strong abilities. Because of the absence of precise guidelines (nothing was known about the artifact, its period or its location relevant to the archaeologist) only generic questions were asked during the RV sessions. The participation of Gonthier in this project allowed our team to conduct its first double-blind research. It also added more complexity into the monitoring and the analysis. Indeed, it was difficult for experimenters to support and lead the viewers during the sessions, which had consequences for the analysis. The constraints imposed by our method, with no data provided about the artifact, were surely felt!

The project produced 800 raw pieces of information which were examined by Gonthier. He estimated that he could judge 73.67% of the data, based on what he knew, at that time, about the artefact. His evaluation was done using transcripts of the RV sessions. On this percentage, Gonthier considered that 30.41% of the data were true, that 21.65 % were partially true and that 47.94% were false. These results are lower than those obtained by the team on its other projects, perhaps because of the absence of precise guidelines for the viewers. In addition, Gonthier indicated that his hypothesis about the function of the target he had chosen was strengthened – the information he received appearing to confirm his academic speculations. According to him, the RV data suggests that the artifact is a lithophone, a musical instrument made of stone. However, there are problems with this – how can an unbiased evaluation be made by a specialist who has his own hypotheses and expectations? Unable to answer to this question, there is therefore a need to estimate the reliability of Gonthier’s evaluation. Perhaps the intervention of an independent qualitative research expert is required.

One of the positive aspects of the MMP was that the automation of the analysis by software (allowed by the iCAT tool, developed by IRIS-IC in early 2009) showed itself to be productive. It made the process much quicker, yet it introduced a real reflection on the sorting of the data.

More questions than answers appeared during this project, which is perhaps to be expected when the aims are to produce a manual that will facilitate the integration of the intuitive tool within archaeology teams. Nevertheless, the TM program strengthens: 1) the idea of different levels of competence regarding the viewers and the training of these viewers; 2) the importance of monitored sessions to produce richer data; 3) the importance of intent and task descriptions; and 4) the importance of a feedback going beyond the information known only by the sponsor.

The program shows the difficulty of using RV in archaeology but it also reports the suitability of this tool in archaeology, even to get feedback on the methodology and hypotheses of actual archaeological research. It also suggests that this tool could be useful as a generator of hypotheses, especially useful when the archaeologist does not know to which way to go in their research, as mentioned by Gonthier

during the evaluation of the project data.

Given the constant difficulty of ‘proof’ in parapsychology, intuitive archaeology also represents an interesting area to explore. Tied to a concrete application of psi it is generating data that will be useful for studying the process of psi in the real world and will lead to valid research opportunities for both archaeologists and parapsychologists.

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PSYCHOLOGY AND PSI: INCLUDING PSI RESEARCH QUESTIONS IN PSYCHOPHYSIOLOGICAL EXPERIMENTS ON LEARNING AND DECISION MAKING

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Under-funding and relative isolation hamper progress in the field of parapsychology. In our view, a promising remedy is to integrate psi research questions into experiments that generate valuable contributions to more accepted scientific fields. Advantages of such an approach include: a) access to advanced technical developments (e.g., fMRI); b) gauging and modeling the relative importance of both psi and psychological factors in human behavior; and c) encouraging a wider, multidisciplinary, scientific audience to explore psi hypotheses for themselves, making these more acceptable and thus better funded.

In this research brief we present the first of a planned series of studies that focus on psychophysiological correlates of learning processes and decision making. Physiological processes reflect affective responses to positive or negative feedback, and theoretical approaches regard these as central to learning (e.g., Damasio, 1994). At the same time, changes in physiological processes have been found to be associated with future events, an expression of ‘somatic psi’.

The first study looks at heart rate changes in an implicit learning task that was specifically designed to address both psychological and psi research questions. In this study, heart rate signal is measured throughout while participants ($N = 49$) decide in each trial whether to ‘open’ a door presented on the computer screen, or skip it and go to the next trial. An opened door reveals a reward of +100, +50, -50 or -100. Three different types of doors, each bearing a different Chinese character, have different probabilities of revealing positive versus negative rewards, although the actual reward is still selected randomly by the computer. The ‘skip’ option is a new element in these types of experiments; it will allow for a better approximation of decision-making situations in real life as well as for a more appropriate test of theory.

The somatic marker hypothesis predicts that learning to skip negative doors and open positive doors more often will at first be implicit. Improved performance will be accompanied by door-type specific heart rate changes based on feedback in previous trials. A recently discovered ‘somatic choice’ effect, which involves a heart rate change linked to specific choices, regardless of its ‘goodness’ or ‘badness’, predicts that pre-choice heart rate deceleration will be more pronounced before skipping than before opening a door (of any type). Finally, the somatic psi hypothesis predicts that post-choice but pre-feedback heart rate deceleration will be more pronounced prior to negative rewards than prior to positive rewards. Initial experimental results and plans for future studies will be presented in our paper.

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THE EFFECTS OF AYAHUASCA ON PSI: A PRELIMINARY STUDY IN SOUTH AMERICA

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The Amazonian sacramental decoction, *ayahuasca* (once called *telepathine* by early researchers) has been used traditionally for several millennia, apparently, for the explicit purposes of accessing altered states conducive to clairvoyance, precognition, telepathy, out-of-body travel, psychic diagnosis, psychic healing, and spirit communication. The psychoactive molecules known to be present within the brew, *N,N*-dimethyltryptamine (DMT) and harmala alkaloids, are also thought to be present in the pineal gland of the human brain and are speculated to play an active role in dreaming. Furthermore, it has been argued that these endogenous neurochemicals also play a primary neurological role in the occurrence of spontaneous psi phenomena. However, although the neurobiological, anthropological and phenomenological evidence for this hypothesis is good, the experimental parapsychological evidence to date is scant, poorly controlled, and inconclusive. The present preliminary study aims to test the hypothesis that the ingestion of ayahuasca can increase performance on a precognition task, offering a methodology to test this.

The proposed project is a quasi-experimental field study, incorporating 40 participants: 20 participants self-selecting to the ayahuasca group and 20 participants in the control group matched for age and gender. For practical and ethical reasons, participants in the ayahuasca group will be drawn from volunteers already attending an ayahuasca ceremony and are not randomly allocated to the group. Using repeated measures, participants will perform the computerized precognition test both before and after the intervention (either ayahuasca or a non-ayahuasca control session with a matched time interval). The precognition test consists of a fully automated computer program that guides the participant through ten trials of intentional target selection from a pool of four fractal images that are refreshed for each trial. Participants will be required to intend that they will select the target image and then visualize the target image in their mind's eye before selecting. A number of validation measures monitor the degree of altered state of consciousness, ability to visualize and the confidence in selecting the targets, for each run. Results will be analyzed in terms of psi score both pre/post intervention and for the experimental/control conditions (to monitor for artifacts of repeated measures). A number of individual differences measures will also be explored in relation to psi performance, including belief in psi, belief in the paranormal and previous substance-use and paranormal experience history. Regardless of the findings, the project will illuminate unforeseen methodological factors and pave the way for a prospective study, and, should the results be positive, offer tentative support for the hypothesis that psi is mediated in the brain by the action of DMT. The current progress of the study will be discussed in the presentation.

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EXPLORING PEOPLE'S EXPERIENCES OF TELEPHONE TELEPATHY: A QUALITATIVE STUDY³

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The general public consistently report high levels of belief that phenomena they would label as 'paranormal' are real and frequently claim to have had personal experience of them (cf. Moore, 2005; 'Three in five', 2003). It is the task of parapsychology to account for those beliefs and experiences by thoroughly documenting the phenomena and constructing explanations that are amenable to testing under controlled conditions. Such explanations will include 'conventional' accounts in terms of currently understood psychological and physical factors (e.g., Jawer, 2006; Wiseman, Greening & Smith, 2003; Wiseman & Morris, 1995), but need also to take the testimony at face value by testing the claims under conditions that retain the essential environmental features for the phenomenon to occur while effectively ruling out normal explanations, and so determine whether an alternative explanation is required. These two approaches are necessarily complementary if parapsychology is to achieve its aims.

However, the validity of both of these approaches depends crucially on researchers' ability to effectively characterize the phenomenon they are interested to explain; without care in this early stage there is a significant danger of producing skeptical accounts that provide only a superficial fit with the phenomena as actually experienced, and proponent accounts that are insensitive to necessary conditions for the occurrence of phenomena, thus inflating the tendency to commit a Type II error. In both cases, the findings derived will fail to do justice to the real-world experience and are unlikely to provide the general public with an explanation that they regard as satisfactory.

Take, for example, the occurrence of 'telephone telepathy', which refers to the experience of thinking of someone who soon afterwards calls unexpectedly on the telephone (Sheldrake, 2000). This is a common experience (Brown & Sheldrake, 2001; Sheldrake, 2000). Clearly, at least some of these experiences will reflect chance coincidences, will capitalize on the tendency to forget those times when we think of someone and they don't ring or when we don't think of someone yet they still call, or will reflect implicit knowledge about the caller's telephone habits. However, the adequacy of such explanations cannot be gauged using Sheldrake's survey data (the only data to date that pertain to the spontaneous occurrence of telephone telepathy), because Sheldrake's surveys adopted a nomothetic approach in asking relatively few closed questions that did not vary from participant to participant and so were unresponsive to differences in their experience and required only short answers in response. This is useful in providing basic statistical data but such a rigid approach has been criticized recently for its inability to give any real insight into the respondents' lived experience (e.g., Roxburgh & Roe, 2010; Smith, Harre & Langenhove, 1995). The current project is intended to address this shortcoming by adopting a qualitative approach in which participants who have experienced telephone telepathy will participate in focus groups to share and discuss the nature and meaning of their experiences (Kamberelis & Dimitriadis, 2005; Kitzinger, 1994; Millward, 2006). Focus groups are preferred to the use of one-to-one interviews as a means of data collection since the former method has been widely used to elicit collaborative and diverse verbal interactions among participants (Kitzinger, 1995), and allow participants

³ We should like to thank the trustees of the Perrott-Warrick Fund, Trinity College, Cambridge, for their kind support of this project.

to have their accounts validated, complemented or even challenged by others who have similar claims to direct experience.

Project methodology and aims: The research aim is to conduct a series of small focus groups ($N = 2-3$) held at The University of Northampton with persons who have personal experience of telephone telepathy. In order to explore the experiential stories that participants have to tell semi-structured interviews will be undertaken. Previous research has posited this type of interview is the most appropriate for representing an individual's experience by encouraging a more reflective process whilst maintaining structure conducive with the overall research aims (Burman, 1994; Flick, 1998; Elliott et al., 1999). Every effort will be made to provide an informal forum (i.e. by providing refreshments and allowing time for participants to acquaint themselves with each other) in which to discuss the conditions under which such experiences occur and how experients make sense of the phenomenon. Participants will also be shown a video extract of the telephone telepathy experiment conducted by Rupert Sheldrake with the Nolan sisters to assess how particular elements of this study correspond with participants' accounts (e.g. whether close relationships are important). All narratives will be recorded, transcribed and thematically analyzed so as to develop an account of lay experiences of telephone telepathy that can be used to assess the adequacy of current explanations of the phenomenon. Briefly, thematic analysis involves a process of immersing one's self in the data by reading and re-reading the transcripts (Braun & Clarke, 2006). Following this process, selective coding will be implemented on individual cases and the thematic domains that arise from these analyses will be cross-checked against each other in order that a condensed thematic structure can be developed (Aronson, 1994; Flick, 1998; Braun & Clarke, 2006). Of importance, however, is that this analytic method is not seeking to merely provide a theme consisting of consensual accounts but of equal interest will be the heterogeneous narratives of how experiences are individually contextualized. Data collection is ongoing and is expected to be complete by the end of June.

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THE RELATIONSHIP BETWEEN LOCAL GEOMAGNETIC ACTIVITY, TIBETAN BUDDHIST MEDITATION AND PSYCHIC AWARENESS: PRELIMINARY STUDY

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The proposal is that the local environment, as well as the person's state of consciousness, affects the ability to consciously use psychic awareness.

For the past three decades research in parapsychology has found evidence that psychic awareness may be related to fluctuations in geomagnetic activity (GMA). Most of this research has used global measures of GMA, but recently Ryan found that certain classes of local GMA appeared to enhance receptive psi, whilst other classes had an inhibitory effect. He demonstrated that these patterns accounted well for the previously reported relationships between psi performance, global GMA and local sidereal time. We are running a long-term study with a special population, which will hopefully help to elucidate this effect.

This research also extends previous studies with Yogis and Tibetan Buddhist monks in India, seeing whether the finding, that more years of meditation practice is related to psi-hitting, remains true for

Western Tibetan Buddhist meditation practitioners, and further exploring which aspects of meditation are most psi-conducive.

A clairvoyance/precognition free-response design is being used in which the participant, after a 15-minute meditation period, attempts to correctly choose a video clip selected at random by a computer. The computer program (PreCOG) chooses a target set at random from a pool of 25 sets, and a target video clip at random from the 4-clip set. Each participant completes a minimum of eight sessions each year, which enables both a within-subjects and a between-subjects design to assess whether or not local GMA is related to psi awareness. This design has both a randomized double-blind and inbuilt fraud control. Participants are all meditators residing at Kagyu Samye Ling Tibetan centre who have practiced meditation for at least 10 years, up to a maximum of 30 participants.

There are three psychological tests being correlated with the psi scores at present: the Meditation Attainment Questionnaire is a measure of the level of meditation attainment achieved by each participant; the Stroop test is a measure of focus of attention; and the Temporal Lobe Questionnaire assesses temporal lobe lability, which may be an indicator of the degree to which the person is affected by GMA. Geomagnetic field measurements sampled each second are being supplied by the British Geological Survey's Eskdalemuir observatory, which is located 2 miles from Samye Ling Tibetan centre. There are three formal hypotheses:

- 1) Years of meditation practice will be positively associated with performance on the psi task;
- 2) Psi performance for sessions conducted during "high band" 1 (0.2 – 0.5 Hz) GMA will be greater than psi performance for sessions conducted during "low band" 1 GMA;
- 3) Psi performance for sessions conducted during "high band" 3 (0.025 – 0.1 Hz) will be less than psi performance conducted during "low band" 3 GMA.

In addition, as this is a preliminary study, a number of exploratory analyses, such as correlations with the psychological tests, are planned in order to enable optimum design for the controlled studies to follow.

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NEGATIVE CORRELATION OF REMOTE VIEWING PERFORMANCE WITH 0.025 – 0.1 HZ GEOMAGNETIC PULSATIONS

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Ryan's (2008) analysis of local geomagnetic pulsation activity during ganzfeld and remote viewing trials suggested that activity in the 0.025-0.1 Hz range (band 3) may inhibit ESP, whereas activity in the 0.2-0.5 Hz range (band 1) may enhance ESP. The research reported here is the first prospective test of these findings.

As higher frequency ($f > 0.1$ Hz) geomagnetic pulsations are geographically highly localized (Ryan, 2008), we conducted remote viewing experiments (precognitive design) at Lancaster University, where a sensitive fluxgate magnetometer is in continuous operation. Two studies were conducted, each

comprising 50 trials. Participants (students at Lancaster University) completed one trial each. Participants were randomly assigned to either a reward or no-reward group. The motivation of participants in the reward group was manipulated by promising a reward of £80 (study 1) or £8 (study 2) to those who achieved a hit. The no-reward condition in the first study achieved highly significant evidence of ESP ($p = 0.0040$, 1-tailed, ES i.e. $Z/N^{1/2} = 0.53$), but results for the three other study/conditions were at chance.

The correlation of ratings assigned to the target with band 3 power was: $N = 89$; $r_s = -0.26$, $p = 0.0063$ (1-tailed), supporting the hypothesis that pulsations in this frequency band inhibit ESP. The negative correlation was homogenous across the two studies. Examining the frequency bands either side of band 3 we found that for band 2 $r_s = -0.12$ and for band 4 $r_s = 0.15$. The differences between these values and the band 3 correlation coefficient are not significant but are nevertheless suggestive of a frequency specific effect, in line with the findings of Ryan (2008).

The correlation of target ratings with power in band 1 (0.2 – 0.5 Hz) was $r_s = -0.05$, n.s., failing to support the hypothesis that this class of pulsation enhances ESP. However, provisional results of an assessment of the absolute level of band 1 activity during the period of experimentation suggest that the few trials conducted when band 1 activity exceeded the threshold identified by Ryan (2008) were also high band 3 trials, and therefore no ESP enhancement would be expected. Further work is required to establish this with certainty, the challenge here being accounting for long-term drift in magnetometer sensitivity in the upper frequency bands 1 and 2.

Considering that the human pineal gland has been shown to respond to weak electromagnetic fields, it seems likely that the modulation of ESP performance is via a coupling of the geomagnetic field with the brain. As geomagnetic pulsations are exceedingly weak it seems likely that this coupling occurs at a sub-atomic level. Considering that band 1 pulsations are predominantly a nighttime phenomenon, whereas band 3 pulsations generally occur during the daytime, raises the possibility that organisms have evolved to use pulsation frequency as a day/night signal. Recent work (Ryan, 2009) suggests that Band 1 and 3 pulsations may enhance and inhibit dreaming as well as ESP. If one regards dreaming as a “psychic state”, one may speculate that daytime band 1 pulsations may “fool” the brain into initiating certain nighttime dream-related functions during the daytime, accounting for the ESP enhancement. Strassman (2000) has proposed that the pineal gland synthesizes the neurotransmitter N,N-dimethyltryptamine (DMT), which has been linked with both dreaming and psychic experience, suggesting DMT as a possible mediator of these effects.

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DEVELOPMENT OF A PSYCHOKINETIC EXPERIENCES QUESTIONNAIRE

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To date, there has been little systematic exploration of the varieties of subjective psychokinetic phenomena experienced by members of the general population. This research brief reports the second stage in an ongoing investigation which seeks to gain a greater understanding of spontaneous psychokinesis experiences. Following a series of in-depth interviews, qualitative analysis of the interviews, reference to cases describing PK phenomena at the Rhine Research Center (RRC) and consultation with the existing literature, a questionnaire designed to measure psychokinetic experiences was developed.

After Simmonds-Moore, Feather and Hamilton (2008), items included PK experiences which appear to derive from the self, those which appear to derive from an external source, those which seem to be intentional and those which seem to be non intentional/automatic. The initial form of the questionnaire includes 40 items pertaining to spontaneous interactions with electrical and other equipment, intentional PK experiences, healing experiences, and PK experiences which seem to derive from sources outside of the self (e.g., a discarnate source/God). The Psychokinesis questionnaire and the Australian Sheep Goat Scale were distributed electronically (via an emailed link to formsite.com) to a mailing list comprised of approximately 180 individuals who had previously contacted the Rhine Research Center/Liverpool Hope University with reports of anomalous physical phenomena. Responses were recorded to each question via checking the relevant box per question, and submitting completed surveys, which were then automatically emailed to the researchers.

Two weeks after the initial mailing, the questionnaire was resent to non respondents. Data collection took place during March 2010. At the end of the study period, a summary data sheet (in Excel) was assembled.

Responses to the questionnaire items will be subjected to an item analysis, in order to ascertain whether any items alter the coherence of the questionnaire as a whole. In addition, internal reliability will be explored via split half reliability and the calculation of a Cronbach's Alpha for the existing scale. Should any of the items need to be removed, Cronbach's Alpha will be recalculated. Concurrent validity will be measured by correlating scoring on the Psychokinesis Questionnaire to scoring on the Australian Sheep Goat scale, which includes 5 items pertaining to PK phenomena. The questionnaire will be redistributed to respondents (after a 6-month period) to ascertain test-retest reliability.

The questionnaire will be factor analyzed to explore the factor structure of the questionnaire, which will serve to identify the different forms of PK experiences (if any). Responses will also be cluster analyzed in order to generate a typology of PK experients.

This questionnaire will enable future exploration of the psychometric correlates of the various forms of subjective anomalous physical experiences.

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EXPLORING HOW SCHIZOTYPY AND PARANORMAL BELIEF INFLUENCE THE TENDENCY TO MAKE THE TYPE I ERROR AND THE DETECTION OF DEGRADED AND PARANORMAL STIMULI IN RANDOM NOISE

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Subjective paranormal experiences are often experienced against a random backdrop; for example, reading the tea leaves to predict the future, scrying, and hearing “electronic voice phenomena” of purported discarnate spirits amid static noise. To date, the dominant framework for understanding paranormal cognition is that believers in the paranormal and those prone to experiencing paranormal/anomalous phenomena (in particular, those who score high on positive schizotypy) are biased toward the detection of signals or patterns in randomness where none are there. This is known as apothenia or the tendency to make a Type I error (c.f., Brugger, 2001), which results in seeing things that are not actually there (hallucinations), making connections between random events and a proneness to find meaning and significance in random events.

Prior research does indicate that believers and those who are prone to anomalous experiences are more likely to perceive meaningful visual and auditory stimuli amid random noise (where none are presented) (e.g., Feelgood & Rantzen, 1994; Young, Bentall, Slade & Dewey, 1987). In addition, research suggests that under perceptually ambiguous situations (where a stimulus is present but degraded), believers are more prone to rapid and over confident decisions about what is hidden amid noise which are less likely to be updated in the light of new information (e.g., Blackmore & Moore, 1994).

Research also indicates that those who score high on positive schizotypy (and related variables) may actually be particularly efficient at the perception of subliminal or weak stimuli (Crawley, French, & Yesson, 2002; Evans, 1997). However, little research has systematically explored individual differences in the perception of weak or degraded stimuli presented amid random noise.

Recent research in parapsychology has indicated that sensory noise may be conducive to performance at an extrasensory perception task. In addition, although findings are mixed, prior research suggests that positive schizotypy may relate to psi performance. Where schizotypy is considered multidimensionally and cluster analyzed, two profiles of positive schizotypy emerge; one which seems to be associated with good mental health, whilst the other is associated with poorer mental health. Interestingly, recent research (Holt & Simmonds-Moore, 2008) found that the healthy schizotypy cluster was the only group to perform significantly on an attention-based psi task.

This study aimed to explore several questions pertinent to the perception/detection of “weak stimuli” (including psi and degraded stimuli) which may or may not be hidden amid random visual and auditory noise. The project will extend the existing literature by exploring three possibilities for subjective paranormal experiences among believers in the paranormal/positive schizotypes: 1) Psi experiences are derived from a greater propensity to detect psi; 2) Psi experiences are derived from a greater predisposition to detect subliminal or weak stimuli; and 3) Psychic experiences are better explained by the human tendency to find meaning in randomness, apothenia or the Type I error (e.g., Brugger, 2001).

This project is informed by research from the hallucination literature (e.g., see Bentall, 1990), the paranormal belief literature (Blackmore & Moore, 1994, Rogers, & Prophet, 2008), the psychotherapy literature (e.g., the use of the Rorschach), the perception without awareness literature (e.g., see Merikle, Smilek & Eastwood, 2001), research on Electronic Voice Phenomena (e.g., see Barušs, 2001) and more recently, the psi literature (e.g., Simmonds & Fox, 2004).

Despite the proposal that the perceptual biases are understood to reflect a continuum (Brugger, 2001), there is currently little research which explores the psychology of the disbeliever. As such, this study will explore the possibility that disbelievers might process information in an opposite manner to that of believers, and be more likely to make the Type II error.

Approximately 40 believers and 40 disbelievers were preselected to participate in a study on individual differences and pattern detection. All potential participants completed a questionnaire battery and were sent an information sheet which gave a detailed description of the study. Participants then came into the laboratory to take part in a computerized study (written in EPRIME2). The experimenter described the study and invited questions from the participant. Participants then undertook a sound check (a very basic hearing test), saw an example of visual noise, heard an example of pink noise, listened to relaxation music and then completed eight trials; four for visual and four for the auditory sense. Each trial consisted of 8 screens of random pixilation for the visual condition and eight trials of 30-second blocks of pink noise for the auditory condition. Each participant was exposed to two weak stimuli targets, one ESP target and one trial with no targets (in counterbalanced order across all sessions). Weak stimuli comprised a series of degraded pictures or spoken words spliced into pink noise (these gradually became clearer across the eight trials). Participants were asked to note down vague impressions, thoughts and feelings on note sheets (one per trial), and to press a key on the computer if and when they could identify something in the visual or auditory noise. If they pressed enter, they were asked to type in what they saw/heard and were then prompted for a confidence rating on what they saw or heard. They were asked to press the button as many times as they saw something different or changed their minds about their confidence during the trial.

At the end of the visual block of trials, each participant was shown the target pictures they were exposed to and told whether they were weak stimuli or psi targets. At the end of the auditory block, each participant was played the auditory targets they were exposed to and told whether they were weak stimuli or psi targets.

Psi performance will be ascertained by two independent judges rating the similarity of imagery and guesses in the psi trials to four possible targets (targets were organized into orthogonal sets of four prior to the start of this experiment. Clusters of schizotypy and paranormal belief and disbelief will be compared on psi scoring and weak stimuli detection. Confidence and the number of button presses per trial will also be compared between believers and disbelievers and different types of schizotypy.

Qualitative analysis will be undertaken to explore the types of imagery people experience amid random visual and auditory noise (irrespective of the existence of a target). Differences will be explored between believers and disbelievers.

Post hoc analyses will enable further understanding of the psychology of the disbeliever, for instance, in terms of their anomalous experiences and their scoring on positive schizotypy measures.

By exploring perceptual and cognitive biases and paranormal and perception of weak stimuli in a within participants study, it will be possible to shed more light on the nature and etiology of believing in and experiencing paranormal phenomena and disbelieving in or not experiencing paranormal phenomena.

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INVESTIGATING PRECOGNITIVE INFLUENCE ON ATTENTIONAL CONTROL USING EYE TRACKING

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This research brief describes preliminary findings from an ongoing series of experiments investigating precognitive influence on attentional control. Two experiments tested whether precognition can influence the control of visual attention during a short term visual memory task. In each trial, participants were required to memorize an array of four objects presented for four seconds, which was followed by the presentation of a video clip for a 'yes-no' recognition test. In the psi condition the video clip featured a target object that was present in the previously viewed array. In the control condition the video clip featured a new object not previously viewed. Eye movements were tracked during presentation of the object array and the computer randomly determined whether the trial was in the psi or control condition after the eye tracking data had been recorded. It was hypothesized that viewing the video clip in the psi condition would activate target-relevant representations during viewing of the object array which would subsequently bias visual attention associated with the target. Accordingly, it was predicted that eye movement measures associated with the target object would significantly differ between psi and control conditions. The results of Experiment 1 showed that the total time spent fixating the target object (dwell time) was an average of 44ms longer in the psi condition compared to the control condition, which was statistically significant ($p = 0.01$, Wilcoxon signed rank test, $N = 30$). *Post hoc* exploratory analysis also suggested that the probability of fixating the target object increased as the trial progressed. However, an unforeseen interaction between the eye tracking software and the code used to generate the random sequence of psi and control trials resulted in a significant excess of psi trials. The results of Experiment 1 can therefore be called into question. Experiment 2 aimed to replicate the results of Experiment 1 and also explored whether the apparent effect observed in Experiment 1 could be influenced by the type of stimulus presented in the recognition test. Participants were randomly allocated to one of two conditions; a *video* condition that presented video clips in the recognition phase and a *text* condition that presented text of object names. The results showed no significant difference in target object dwell time in either condition, and post-hoc examination of target fixation probability also showed no significant relationship over time in either condition. Further experiments are planned that will attempt to replicate the apparent effect observed in Experiment 1.

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A SCIENTIFIC TEST OF THE MODEL OF PRAGMATIC INFORMATION USING EUROPEAN CASES OF ANOMALOUS EXPERIENCE⁴

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Objectives: The ‘Europsi’ study has two primary objectives. The first is to conduct a scientific test of von Lucadou’s Model of Pragmatic Information (MPI) using European cases of poltergeist-type experiences. The second is to build a Europe-wide collaborative network of research units and individuals who are contacted by members of the public seeking help or information about their anomalous experiences. In the course of the study we will also start to gather a collection of European RSPK-type cases.

Methods: The MPI predicts that spontaneous poltergeist-type experiences will decline in cases that are evaluated by researchers, relative to cases that are not subject to investigation. The study tests this hypothesis by inviting members of the public who report poltergeist-type experiences to log on to a secure website and enter details about their experiences. For half of the cases, these details are viewed and evaluated by a researcher. For the other half, the descriptions are never viewed. Cases are allocated to each condition according to a random counterbalanced sequence (ABBAA...). Two to three weeks later the study participants are automatically prompted to re-visit the study website and complete a form indicating whether there has been any alteration in the frequency of type of experiences that they are having. The MPI predicts that the ‘evaluated’ cases will show a decline in poltergeist-type experiences compared to the ‘never-evaluated’ cases.

Preliminary Results: The study ends after two years of data collection, or sixty cases of poltergeist-type experiences, whichever comes first. Data collection commenced in October 2009. The design of the study means that analysis does not take place until the period of data collection is over, therefore interim results are not available for reporting. However, we can report that the second objective of this study, to build a collaborative network of European researchers, has been achieved already. Over fifty individuals and research units across Europe, representing 13 different nationalities, have agreed to participate in this study. We are sending quarterly updates to all of these collaborators, to inform them of the progress of the study, and to remind them of the agreed protocol. To date, there have been over 20 referrals to the study; about one third of these have not met the entrance criteria and so have not progressed to full participation. The level of referrals shows that the collaborative network is working well, and the automated ‘gate-keeping’, intended to protect potential participants who may be suffering from clinical psychological problems, also seems to be functioning as intended.

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⁴ We are grateful to the Bial Foundation for funding this study with grant 44/08.

ABSTRACTS

Workshops

THE ROLE OF ANOMALOUS INFORMATION IN THE WORK OF CREATIVE PEOPLE

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Creativity research has increased in both quantity and quality in recent years. However, the role of anomalous information has been unjustly neglected. Intuition is poorly understood and putative psychic experiences are customarily overlooked. This workshop will focus on several case histories, and members of the audience will be invited to respond to the possibility that psi played a role in the incidents presented. Ramanujan, the brilliant mathematician from India proposed theorems that still puzzle experts in the field. He claimed that the Hindu goddess Namakal came to him in his dreams, presenting him with ideas that he would convert into theorems when he awakened. Hilprecht, an archaeologist, had puzzled in vain over fragments of a Babylonian cylinder that held the key to the reconstruction of a language system. A priest from ancient Nippur provided him with the exact solution to the problem, and he was able to put the fragments together in the manner dictated in the dream. Agassiz, a naturalist, was working with a stone containing a rare fossil. He hesitated to break the stone, in fear of ruining the fossil. One night he dreams that he was using a hammer and chisel to open the stone in a particular way. Upon awakening, he followed the directions give him in the dream, and the undamaged fossil was revealed. Are these examples of unconscious problem-solving? Were the solutions dependent on material already available or was there anomalous information that could have been psi-related? These are some of the questions that the presenters and the audience will discuss, along with possible research strategies to explore and understand the creative process more fully.

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ABSTRACTS

Panels

ANOMALOUS EXPERIENCES AND MENTAL HEALTH

This panel will explore recent developments in psychology, clinical psychology and counseling with regard to anomalous experiences. Anomalous experiences can be associated with psychopathology, but they can also be associated with very good mental and physical well being. Members of this panel include researchers on the psychology of anomalous experiences and those who are working in the applied field (clinical psychology and counseling). Discussion will include exploration of the differences between healthy and less healthy experiences and anomalous experiences and health within members of the non-psychiatric normal population; the role of mindfulness and appraisal of anomalous experiences, and insights gained from clinical practice with those experiencing anomalous phenomena in France, the UK and Germany.

COUNSELING WORK AT THE IGPP – AN OUTLINE

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The Institut für Grenzgebiete der Psychologie und Psychohygiene (IGPP) [Institute for Border Areas of Psychology and Mental Hygiene] in Freiburg (Germany) was founded in 1950 by Prof. Hans Bender (1907-1991), the most important pioneer of German parapsychological research after WWII. Since its foundation, information, counseling and education with regard to genuine or alleged “occult”, “magical”, “supernatural” and “paranormal” phenomena have been central tasks of the IGPP. They are combined under the umbrella of “mental hygiene”. After new substantial funds became available in the early 1990s, the IGPP started, since 1996 in collaboration with the Institute for Psychology of Freiburg University, a special research project on “Counseling and Help for People claiming Exceptional Experiences” which was directed between 1998 and 2001 by clinical psychologist Dr Martina Belz. The goal of the project was to develop, implement and evaluate a special counseling and treatment concept for people who felt distressed or burdened by exceptional experiences (ExE). In accordance with current regulations and standards of basic documentation in psychotherapy, a special documentation system (“DOKU”) was developed by the IGPP counseling group to record systematically sociodemographic, anamnestic and phenomenon-specific data. Using this documentary system, it was possible for the first time to record continuously and systematically, as well as evaluate statistically, the number of IGPP counseling cases. There exists now a carefully documented database of cases ($N = 1615$) which can be used for different research strategies. One example: Using Metzinger’s theory of mental representation, four basic categories of ExEs could be described: (1) internal phenomena, (2) external phenomena, (3) psychophysical dissociation, and (4) coincidence phenomena which lead to a six-category phenomenological ExEs scheme (Internal Presence & Influence; Poltergeists & Apparitions; Extrasensory Perception; Meaningful Coincidence; Mediumship & Automatism; External Presence & Paralysis). At the moment, the IGPP counseling team consists of four licensed psychologists with a clinical-therapeutically background and a long-time experience with counseling in “Clinical Parapsychology” working part-time who meet each other on a weekly basis to discuss incoming cases. For clients psychotherapeutic treatment can be offered. Twice a year, the IGPP counseling team is offering educational seminars on ExEs specifically directed towards psychological and medical psychotherapists as well as to counselors in

psychosocial care. Also catamneses of the IGPP counseling clientele are being performed on a regular basis. In preparation is an IGPP project dealing with online ExE counseling and information services which are considered a useful supplement to and extension of the existing telephone, mail and face-to-face counseling.

DIFFERENTIAL CLINICAL PRACTICE OF ANOMALOUS EXPERIENCES

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The concept of schizophrenia in the DSM, inherited from Bleuler, postulates that every peculiar idea can be a sign of psychosis. Thus some items of psychiatric questionnaires detect psychosis by association with statements of paranormal beliefs or anomalous experiences. This kind of pathologization of anomalous experiences is blind to certain nuances and has perverse effects on discourse about and types of care for these experiences (Schetsche, 2003). More recent work based on semi-structured diagnostic interviews or questionnaires (Brett et al. 2007; Evrard, in preparation; Schofield & Claridge, 2007; Spriet, 2006; Zahradnik, 2007) reveal individual differences in the appraisal of anomalous experiences, differences that involve a differential diagnosis of peculiar experiences in their relation to mental health and to possible clinical practice.

WHAT CAN CREATIVITY RESEARCH TELL US ABOUT HEALTHY ANOMALOUS EXPERIENCES?

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Creativity (especially involvement in the arts) is related to reports of anomalous experiences (such as mystical experiences and lucid dreams) and to the unusual experiences sub-scale of schizotypy, with its focus on pseudo-hallucinations and paranormal experiences (Ayers et al., 1999; Holt, 2007; Nettle, 2006; O'Reilly et al., 2001). This talk will focus on models that have been used to explain this association, which are: 1) a medical model, contextualizing anomalous experiences within a disease framework and associating creativity with bipolar disorder and schizophrenia (Jamison, 1989); 2) a 'controllable oddness' model, which suggests that creative people have a cognitive framework and/or personality that enables them to successfully navigate between anomalous and 'ordinary' experience (Barron, 1993); and 3) a 'healthy anomalous experiences' model, which suggests that creativity is associated with distinct types of anomalous experiences, those that are inherently healthy, positive and meaningful, such as the 'flow state' (Csikszentmihalyi, 1996). Focus will be given to the latter two models and factors that might distinguish between anomaly-prone 'creatives' and those labeled as suffering from schizophrenia will be discussed (such as ego-strength and attentional control). The unique role that artistic or creative expression might play in the processing of anomalous experiences will be briefly considered, in accordance with research showing that how anomalous experiences are interpreted is important for subsequent health (Kohls & Walach, 2007).

APPROACHES TO COUNSELLING THOSE WITH ANOMALOUS EXPERIENCES

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Counseling with clients who had anomalous experience is usually neglected in the general approaches to counseling and psychotherapy. Nevertheless, we know from several surveys that a high amount of the population has had anomalous or exceptional experiences. The number of clients seeking either help or information who approach the few existing institutions dealing with these topics furthermore demonstrate the need for professional counselors to deal with these issues. Currently several institutions have developed their own and often specific approaches to handle these cases. In order to benefit this field and broaden and generalize the knowledge about how to counsel clients seeking help regarding their exceptional experiences several things may be needed. Firstly, an overview and also a classification of the type of experiences people are reporting who seek a counseling office. This kind of data has been recently provided by two groups from Freiburg, Germany. Secondly, a somewhat coherent model of how to encounter problems reported by the clients (e.g. black magic against them, RSPK in their houses) or for all those seeking information how to deal with this demand, especially in the cases where there is no easy explanation at hand. So far only a very limited amount of models and/or explanations are available and a systematic empirical validation of their predictions has not taken place yet. Thirdly, a basic counseling approach that is appropriate for dealing with this specific type of clients and cases. Here many different methods are available from counseling and psychotherapy which are also validated empirically. I will argue that one specific approach named systemic counseling (or family counseling) which is theoretically based on a constructivist and system theory approach offers a large set of advantages for this particular task.

HOW MIGHT WE MANIPULATE ANOMALOUS EXPERIENCES FOR MENTAL HEALTH AND TRANSCENDENCE?

Christine Simmonds-Moore
Liverpool Hope University

Many people who have experienced subjective anomalous or paranormal phenomena contact academic institutions that undertake teaching or research on academic parapsychology. In addition, some people are intrigued by paranormal experiences and are interested in learning how to experience [more] psychic phenomena or undertake “psychic development”. Other people report feeling overwhelmed and confused by their anomalous experiences and want to learn how to switch them off or gain control over them. At present there are no clear guidelines available to those working at the public face of parapsychology, and psychic development. This presentation will introduce the ideas of trait and state anomaly proneness,

focusing on the personality type positive schizotypy and sleep-related states of consciousness. It will summarize the differences between healthy and less healthy anomalous experiences and suggestions will be made with regard to the manipulation of anomaly-prone states, such that anomalous experiences may be experienced in a healthy way, or switched off.

THERAPIST/COUNSELOR ATTITUDES TO PSI WHEN COUNSELING CERTAIN TYPES OF ANOMALOUS EXPERIENCE

Ian Tierney

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The editors of the book *Varieties of Anomalous Experience* (Cardeña, Lynn & Krippner, 2000) give four interpretations of the term anomalous experience, ranging from statistically uncommon experiences, through experiences that involve altered states of consciousness or statistically rare beliefs, to the experience of 'unexplain(able)ed' events where the evidence for occurrence of 'something' is strong.

When counseling individuals disturbed by experiences which fall into the first three interpretations then standard psychotherapeutic approaches are appropriate. These experiences fall within the province of 'established' psychology. Discussions of hallucinations, delusions, rare beliefs, mystical experiences and other claims of parapsychological experience with absolutely no corroborating evidence are of this type. Therapy usually involves non-directive counseling, reflecting the experience back to the experient in various ways. The therapist's attitude or belief about the nature of the experience need not, and possibly should not, be part of the discussions.

However, when counseling individuals affected by events falling within the fourth interpretation of 'anomalous' experience, this detached attitude cannot be sustained by the therapist. Most commonly events of this type involve RSPK. At a minimum the therapist's attitude to such events, if asked, has to be that they can and do occur, in the common-sense use of the term, although causes are little understood. The alternative is to risk the experient/s believing that they are not believed, with consequent alienation from the therapist. A very recent event in Scotland is used as an illustration of this type of event.

ABSTRACTS

Posters

PERFORMANCE IN GROUP TELEPATHY EXPERIMENTS AS RELATED TO TARGET PICTURE CHARACTERISTICS

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Analyses of previously published as well as new data on the telepathic group communication of emotions, as evoked by slide pictures, was performed with a view to identify picture characteristics that predict performance.

Performance data were collected as follows. When the participants (typically about 15 psychology students, who participated in the study as part of course requirements) arrived at the laboratory, they were randomly divided into two groups, one sender group and one receiver group. The senders and the receivers were sequestered in two soundproof rooms, with one room in between. Each participant served both as a sender and as a receiver in two parts of a session. The senders' only task was to look at the pictures and to "hold on to" the feelings evoked by the respective pictures as long as they were shown. The receivers were instructed to guess whether a given picture was positive or negative. Performance was measured as the receivers' ability to discriminate among the 15 positive and the 15 negative target pictures, randomly shown to the senders. Each picture was shown for 20 seconds, with an inter-stimulus interval of about half a second.

In the present study, performance was analyzed as a function of psychological as well as psychophysiological properties of the target pictures.

Each of the 30 target pictures were rated by 66 undergraduate students, 24 males and 42 females, on six graphic scales. Four of the six scales measured purely emotional aspects of the pictures, namely how (a) pleasant/unpleasant, (b) involving, (c) compassion-arousing and (d) repulsive they were. The two remaining scales measured (a) how well-known and (b) how apprehensible the motifs were.

Two other studies were performed to measure physiological responses to the target pictures. In both studies participants were tested in small groups.

In the first study, electrodermal activity (EDA) was measured using an EDA monitor, with a software program for collecting and analyzing data. Sixty undergraduates, 32 females and 28 males, participated in the first study.

In the second study, heart-rate (HR) was measured using an electronic HR meter, consisting of two parts: (a) a belt with heart-beat sensors and (b) a "watch" for receiving and storing signals from the heart-beat sensors, which were analyzed using an associated software program. Fifty undergraduates, 36 females and 14 males, participated in the second study.

The eight picture scales and the two physiological scales were merged into a composite scale, interpreted as reflecting negative arousal.

In the present study, two different data sets were analyzed. The first dataset was based on previous studies, involving 845 participants, and the other came from a new study, involving 652 participants, yielding a total of 1497 participants, who together provided almost 45,000 responses. The two data sets were analyzed both separately and together, with relative hit rate as the response measure (where hit rate was calculated by dividing a hit for a given participant and picture by the number of corresponding guesses, e.g. the number of negative guesses in the case of a hit for a negative picture).

A step-wise hierarchical strategy was used in the data analysis, comprising three major steps. In the first step, all of the thirty stimulus pictures were analyzed simultaneously. A significant Pearson correlation was obtained between EDA and relative hit rate (even when correction was made for multiple

tests), but neither any of the remaining seven original scales nor the composite scale was significantly linearly related to relative hit rate.

In the second step, positive and negative pictures were analyzed separately based on inspection of a significant U-formed relationship between relative hit rate and the composite scale (negative arousal). Different analyses indicated that no measurable discrimination had occurred among the positive pictures. However, there were several pieces of evidence suggesting that at least some of the negative pictures had been distinguished. For example, a one-way repeated measures ANOVA showed a significant picture effect for the total data set and a nearly significant picture effect for the new data set. Furthermore, original picture scales characterizing the pictures in terms of “unpleasant arousal” showed significant correlations with mean relative hit rate – in some cases even highly significant correlations. Accordingly, the composite scale showed a highly significant positive correlation with relative hit rate for the new data set and a more modest significant positive correlation for the total one.

In the third step of the analysis, the negative pictures were analyzed in more detail. All negative pictures were divided into two categories based on a median split of the composite scale. The sum of the relative hit rates of the seven pictures below the median and the sum of the relative hit rates for the seven pictures above the median were then calculated, to yield overall relative hit rate values for the two sets of pictures.

For the new as well as the total data set, the difference between high and low negative arousal level pictures in relative hit rate turned out to deviate significantly from MCE (=0). A further analysis showed these deviations mainly to be attributable to lower-than-expected relative hit rates for the low negative arousal level pictures and only marginally to higher-than-expected relative hit rates for the high negative arousal level pictures.

For each of the three data sets, the difference between relative hit rate for high and low negative arousal pictures was correlated with ten potential moderator variables: eight person- or situation-related variables (belief in telepathy, as measured before and after the experiment, respectively, age, gender, sender/receiver order, number of receivers, number of negative guesses and repetition aversion) and two physical variables (Ap-index and LST). For each of the three data sets, a significant negative correlation was found between the relative hit rate difference and one of the ten variables: namely, number of receivers. This relationship was for the most part attributable to a positive correlation between the relative hit rate for the low negative arousal level pictures and number of receivers. Furthermore, a 2x2 mixed ANOVA was performed, with negative arousal level as the within-group factor, small sessions (N of receivers < 6) vs. large sessions (N of receivers > 5) as the between-group factor, and mean relative hit rate as the dependent variable. The results showed a highly significant main effect for negative arousal level and an interaction effect at an even higher significance level. In line with this finding, re-examining the relationship between relative hit rate and the nine picture scales (including the composite scale) showed the results obtained for the sessions with small numbers of receivers to be stronger than the results obtained for all sessions.

Two major findings were discussed. Firstly, that arousal rather than pleasure-displeasure, which often appears as the most salient emotion dimension, was correlated with telepathic performance. Secondly, that number of receivers appeared to be a critical moderator variable. Various “normal” explanations of the positive results – including experimental errors and statistical artifacts – were discussed and dismissed as less probable.

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ARE THERE MEAN VALUES AND RELATIONSHIPS BETWEEN THEM IN STATISTICAL PARAPSYCHOLOGY?

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Statistical parapsychology is the modern experimental approach to anomalous effects such as psychokinesis (PK) and extrasensory perception (ESP). An effect is called anomalous or parapsychological (psi) if it is not mediated by any known physical mechanism. Today there is overwhelming evidence for a number of anomalous effects. Everybody is free to reject the evidence expressed by infinitesimal chance probabilities on the order of 10^{-10} or less, but then they must believe in a gigantic conspiracy involving hundreds of researchers.

Some ESP effects, such as dream psi, ganzfeld psi and the sense of being stared at, are directly analyzed by plotting the cumulative hit rate as a function of time measured in years or number of studies. These rates turned out to assume rather stable values after inherently large initial fluctuations. The statistical significance of the dataset of a given psi effect is expressed by the z-score. For large numbers of individual trials, it is the excess hit number, i.e. the difference of the measured number of hits from its mean chance expectation (MCE) value, divided by the standard deviation of the number of hits. The chance probability of obtaining a z-score at or above z is denoted by $P(z)$. For the three effects mentioned, dream psi, ganzfeld psi and the sense of being stated at, the presently reached overall z-scores are 6.5, 9.1 and 16.4, resulting in the chance probabilities $P \approx 10^{-10}$, 10^{-19} and 10^{-59} , respectively. The limit of significance is often set at the chance probability $P(z) = 0.025$, which corresponds to $z = 1.96$. The effect size e (or z-score per single trial) is defined as $e = z/\sqrt{N}$. If the psi-induced extra hit rate is independent of N , so is the effect size.

The most extensively studied psi effect is the influence of PK on binary random number generators (RNGs). They are designed to generate by chance, i.e. in the absence of PK, zeros and ones without preference for either bit. In principle, RNGs are like coin flippers. However, they are automatic, thus allowing experiments consisting of rapid sequences of large numbers of bits (ca. 20 to 10^8) instead of a single-trial experiments separated from each other. If they are “willed” to generate, say, more ones than zeros they will do so on average though with erratic deviations.

The original plan to determine a characteristic psi-induced extra hit rate failed in the case of RNG experiments. Instead, what was found in the course of a few decades is a rather stable mean z-score $\langle z \rangle \approx 0.6$ of apparently “isolated”, i.e. well separated experiments that is indifferent to N , henceforward the number of bits making up an experiment. This situation requires a meta-analysis based on the individual analyses of the isolated experiments. Use of Stouffer’s formula then leads to an up-to-date total z-score of 16, corresponding to $P(16) \approx 10^{-59}$. Apart from shifting the Gaussian distribution of z-scores, psi causes a considerable widening, i.e. an increase of its variance, from 1 to 1.5

Stable hit rates and, in the case of RNGs, stable mean z-scores seem to indicate that there is some system in psi effects. Comparison of the dataset of RNG experiments with that of single-trial dream psi experiments suggests that PK and ESP are about equally effective and independent of the number of trials in an experiment. This double conjecture is based on the following considerations: The mean z-scores of isolated experiments, rapid sequences of bits in one case and single trials in the other, are similar, differing by a factor of less than 4. The factor can be halved if the effect size is assumed to be proportional to the inverse square root of the running number n rather than the total number N of bits in the experiment. At small N (say $N < 20$) the mean z-score, which now is proportional to the sum of $1/\sqrt{n}$ over $n = 1, 2, \dots, N$, decreases from a practically constant value at large N to half of it at $N = 1$. As a

consequence, $\langle z \rangle \approx 0.3$ should hold for one-trial RNG experiments, which remains to be tested by measurements. In both types of experiments the MCE hit rate is $p = 0.5$ or, in other words, the multiplicity or number of equivalent random choices is $m = 2$. In the tests of the sense of being stared at, also of class $m = 2$, the extra hit rate is half as large as in the dream psi studies. This might be due to less perfect isolation, the interval between subsequent trials being one or two minutes instead of a whole day. The studies of ganzfeld psi belong to the class $m = 4$ and the interval between trials is a matter of a few hours. Their effect size is practically as large as that of dream psi.

By mathematical means, it is shown that the widening of the z-score distribution can most naturally be attributed to a Gaussian distribution of the effect size e . Hitherto, statistical fluctuations of the effect size have been ignored.

Two relationships, not containing m , between widening and shift of the Gaussian distribution of z-scores as well as two formulas for the mean z-score as a function of m are proposed. They are applied to the datasets of many-trial experiments with RNGs ($m = 2$), falling dice ($m = 6$) and numbered table tennis balls drawn from an opaque bag ($m = 5$). They can be checked only partially. In the first case this is due to insufficient or missing data. In the second case, both formulas seem to fail because of a loss of equivalence of choices which are equivalent in the absence of psi.

The size of the mean z-score of RNG experiments, $\langle z \rangle \approx 0.6$, would be appropriate to account for mind-brain interaction. A previous model of the interaction is revisited that views the neuron as an RNG with each of its ca. 10000 synapses contributing a bit per decision on whether or not to fire an action potential. This time, single-trial switching and the widening of the Gaussian distribution of z-scores are included in the treatment.

A close similarity of the psi effects at $m = 2$ in PK and ESP experiments would make unnecessary the often difficult distinction between the two kinds of effects. Moreover, an only weak dependence of their mean z-scores on the number of trials in an experiment down to

$N = 1$ would be in accordance with an often noted far-reaching indifference of psi experiments to distances in space and time and, in the case of PK, to the type of binary RNG. The order of magnitude of the mean z-scores, which seems to emerge in such experiments, appears compatible with a possible role of psi in mind-neuron interaction and extrasensory communication. The conjecture that these two phenomena (of enormous philosophical and practical implications) do exist may be no more than fantasy, but there is preliminary support by the experimental results in statistical parapsychology.

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IS PSI-MEDIATED INFORMATION PROCESSED LIKE THE UNATTENDED STIMULUS IN LATENT INHIBITION STUDIES?

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Filter theories of psi postulate that psi-mediated information operates as a ‘weak stimulus’ that is likely to be filtered out of conscious awareness in the waking state. This poster presents two studies in which an experimental paradigm developed to examine the efficacy of filtering mechanisms, Latent Inhibition (LI), was adapted to include a psi component. Latent Inhibition assesses the processing of irrelevant stimuli, where ‘weak filters’ are indicated by the conscious processing of material that has previously been presented as inconsequential (rather than inhibiting this ‘irrelevant information’ from consciousness, which is indicative of concentration on task demands and a ‘strong attentional filter’). We explored whether psi-mediated information might be processed akin to the irrelevant stimulus in LI. Further, as the processing of the irrelevant stimulus in LI has been shown to be modulated by creativity and schizotypy, it was hypothesised that these same variables would also modulate processing of psi-mediated information. Additionally, the predictive value of belief in the paranormal was examined.

In a typical LI experiment there are two conditions, where, during an initial masking task⁵, participants are either: 1) repeatedly exposed to a particular stimulus (the pre-exposure [PE] condition); or 2) not exposed to this stimulus (the non-pre-exposure [NPE] condition). The stimulus is irrelevant to this masking task and serves no function. In a subsequent task (the experimental task), this stimulus assumes relevant status; it must be attended to in order to solve a problem, that is, it must enter into cognitive associations. Typically, participants in the NPE condition, to whom the stimulus is novel, solve the problem faster, while participants who have been pre-exposed to the stimulus, without consequence, take longer to solve the problem. This is presumed to be because the ‘irrelevant stimulus’ has been inhibited or filtered from awareness (Gray, et al., 2002). In the current research a standard visual LI protocol (as described above) was replicated, and two conditions added: 1) psi-pre-exposure (ψ PE), where a sender attempted to transmit the stimulus telepathically during the initial masking task; and 2) non-psi-pre-exposure (N ψ PE). In this visual paradigm the inconsequential stimulus is the white outline of a triangle. Thus, in the PE condition this triangle was presented visually, and in the ψ PE condition the triangle was sent telepathically by a physically remote sender. Hence, it was assessed whether psi-mediated information might be inhibited from awareness when it is irrelevant or not needed, by testing whether subsequent cognitive performance requiring the associability of this stimulus was affected. If so, this would provide support for the hypothesis that psi and perceptual stimuli are processed with the same attentional mechanisms.

Study One consisted of a direct comparison of the processing of a psi and a perceptual stimulus in an LI paradigm as described above. There were 80 participants (26 males, 54 females), recruited from staff

* The authors gratefully acknowledge a bursary from the Bial Foundation (155/04) which has enabled this research.

⁵ The term ‘masking task’ refers to a distracting task with which participants engage, the nature of which is not directly relevant to the overall LI task.

and students at the authors' universities. A standard LI effect was obtained, but no overall psi-LI-like effect was obtained ($z = 1.02$, $p = .308$, two-tailed). However, a psi-LI-like effect was obtained for participants characterized by intrapersonal awareness ($z = 2.35$, $p = .019$, two-tailed). The results suggested that if psi does operate like LI, it does so with participants who score highly on intrapersonal awareness, characterized by emotional creativity and the use of non-linear cognition in the creative process (e.g. intuition, hypnagogia and sensed presence) (Holt et al., 2004). This sub-sample appeared to process psi-mediated information in a way analogous to LI, unconsciously filtering it from conscious awareness when it was irrelevant, and continuing to inhibit its representation in awareness on a subsequent task, thus impairing its associability.

Study Two was a replication and extension of Study One. It tested whether the processing of an inconsequential psi-stimulus is subject to the same parameters as the processing of an inconsequential perceptual-stimulus. An optimal LI-effect occurs when the masking task requires controlled processing but is not too demanding, thus enabling automatic processing of the inconsequential-stimulus (Lubow & Gewirtz, 1995). When the masking task is complex, it is theorized, all attentional resources are allocated to it, preventing the inconsequential-stimulus from being processed automatically, so that it does not need to be inhibited in order to facilitate selective attention. Study Two examined whether a psi-effect would likewise be attenuated by a complex masking task, which would suggest that psi-mediated information is processed with automatic attention in the same way. Thus, an extra condition was added: Masking Task Load, with two levels: Ordinary/Low Load (as in Study One) and High Load (following Braunstein-Bercovitz & Lubow, 1998). 80 female participants took part in Study Two (to avoid complications in interpretation due to gender effects, which emerged in Study One). Naïve participants were recruited from university staff and students. This time an experienced meditator was chosen to act as the sender, it being reasoned that they would be better able to focus on the psi-stimulus, producing a more stable stimulus.

In Study Two a significant LI effect was obtained only in the low cognitive load condition, as was predicted. The same pattern was found for across the psi conditions. A significant psi-LI-like effect was obtained only in the low load condition (Low load: $z = -3.059$, $p = .002$, two-tailed; High load: $z = -1.952$, $p = .051$, two-tailed). The latter is so close to significance however, that this outcome is difficult to interpret. Nevertheless, while a psi-effect may be present in the high load condition, it appears that increased attentional demands reduced the strength of this psi-LI-like effect. Thus the same attentional effects were found with both psi and supraliminal unattended stimuli. However, in Study Two none of the personality and belief measures were associated with psi-performance as in Study One.

In conclusion, this research suggests that the modeling of psi as an analogue of the inconsequential stimulus in attention is profitable and worthy of further consideration. The research provides support for the hypothesis that psi-mediated information may be automatically processed and unconsciously inhibited from attention when it is not needed. This interpretation accords with early and subsequent models of psi functioning, where psi-mediated information is described as a weak stimulus that is filtered out of conscious awareness due to the more pressing needs and demands of everyday life, and suggests that psi-mediated information may be present in the neurological/cognitive system at an unconscious level, and may thereby still affect behavior (e.g. Bergson, 1913; Stanford, 1990; Thalbourne et al., 1997; Bem, 2003). Our study implies that psi-mediated information might unconsciously affect cognitive processing. However, further replication and analysis of the parameters of this potential effect are required.

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GAS MEASUREMENT METHOD FOR A QUANTITATIVE STUDY ON NON-CONTACT HEALING – A NEW METHOD USING CUCUMBER AS A BIO-SENSOR

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The authors show an outline of a gas measurement method developed recently by themselves. The method is a new quantitative measuring method for non-contact healing, *ki/qi* or bio-PK. *Cucumis sativus* ('white-spin-type' cucumber) was used as a bio-sensor.

Purpose of Development. Using biophotons from cucumbers, the authors previously developed a quantitative measurement method for non-contact healing. Our biophoton measurement method can estimate a healer's controlled healing power in just one or two trials. However, expensiveness of the equipment for biophoton measurements has obstructed widespread use of the method. An easy and inexpensive method was needed. The authors took notice of a gas being generated simultaneously with the emission of biophotons, and tried to develop an easy method in which this gas is measured by a gas-measuring detector tube.

Design. The gas method was based on the biophoton method. Four circular slices (thickness: 2 cm) were cut from a cucumber. Each slice was cut again and opened into two slices (thickness: 1 cm); this gave four paired pieces. One of each paired pieces was used as the experimental sample and the others (flower side) as the control. Four pairs were set into two glass Petri dishes. Controls and experimental samples were placed symmetrically in dishes, which were wrapped beforehand with a plastic wrapping sheet. Each dish was labeled and all dishes were covered with glass lids. One measurement with the simultaneous calibration technique (SCAT) needs four cucumbers (16 pairs of pieces), and half of the pairs were used for a main test and the others were used for a simultaneous blank test for calibration. Each subject tried to increase the odor of the cucumber without direct touch for 30 minutes against experimental dishes. Next, all glass lids were removed and each Petri dish was set in a sealed container (2.2L) and their gas emission was measured with the gas detector tube 24h later. There is no specialized tube for cucumber gas, but the authors found that a short-term quick-measuring detector tube for ethyl acetate (141L, Gastec, Japan) could be used. The *J* value, which is the natural logarithm of the ratio of gas concentrations of experiment C_E and control C_C , was introduced as an index of the effect of non-contact healing.

Detectability. This was early equal to biophoton method. Controlled healing power can be classified tentatively as: $J < 0.1$, novice; $0.1 < J < 0.2$, middle; $0.2 < J$, expert; $0.3 < J$, psychic.

Applicability and cost. Multiple-place measurement is possible. Special places, which are often claimed to show similar healing effects could also be measured. The minimum initial cost is about €500.

Interpretations. Suggestive results were obtained through developing the gas method. A subject may make "field" around his/her body during the task and the "field" may spread to several meters far from his/her body if he/she has strong power. A possibility was suggested that a background potential of anomalous phenomena exists and drifts slowly. The gas method is considered to be a useful method that can initiate and expand future research.

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INVESTIGATION OF ANOMALOUS PHYSIOLOGICAL STIMULUS DISCRIMINATION

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Objectives: A physiological reaction to a presented stimulus is influenced by stimulus novelty, significance and intensity. This reaction, which is called orienting response (OR), consists of motor components, autonomic components (e.g. cardiovascular and skin conductance responses), electrocortical responses and respiratory changes and should ensure an optimal perception of the stimulus.

When objects of the same object category are presented serially while measuring physiological data simultaneously objects differing with respect to their intensity, novelty and/or significance can be distinguished by means of the physiological responses they evoke. Anomalous stimulus discrimination refers to the occurrence of significant differences in physiological reactions to objects, although these objects do not differ obviously in intensity, novelty and/or significance for the subject at that time.

In a forced-choice guessing task, Sartori et al. (2004) presented four calm pictures successively and measured heart rate simultaneously. After that, the subject had to guess which of the presented pictures the computer would randomly choose as a target later (precognition condition) or which picture the computer had already randomly chosen as a target (clairvoyance condition). Thereafter the correct target was presented to the subject. In both conditions a significantly higher heart rate occurred during the 10-second presentation of the target picture. The rate of correct choices was at chance level. The results of the precognition condition were replicated by Tressoldi et al. (2005).

This study aimed at investigating the above-mentioned effect in three ways. First, a replication of the effect was intended by using a similar forced-choice guessing task and the same analysis of the heart rate, but with a different set of stimuli. Second, it was examined whether the effect can also be found in peripheral physiological measures other than heart rate (multi-channel physiological measurement). Third, correlations of behavioral and physiological data with personality traits were investigated.

Method: A sample of 48 subjects completed a forced-choice guessing task. In each of 14 blocks four pictures of objects of a particular object category (e.g. household articles) were presented successively on a display screen, each for 10 seconds. Thereafter, the subject had to forecast which object the computer would randomly choose as target later. After the subject had made their choice the randomly chosen target was presented. The sequence of the object-categories and of the objects within each category was balanced across subjects. Positions and objects of the targets within a block were not balanced across subjects because targets were chosen by the computer randomly and directly after the subject's choice.

Electrodermal activity (EDA), thoracic and abdominal respiration (RLL1 and RLL2), heart rate (tonic HR and phasic HR) and finger pulse waveform length (FPWL) were recorded. Furthermore, the subjects' scores on paranormal belief (Australian Sheep-Goat Scale), absorption (Tellegen Absorption Scale) and openness to experience (NEO-FFI) were collected.

For replicating the effect, found by Sartori et al. (2004) and Tressoldi et al. (2005), tonic HR was analyzed as in these studies. For analyzing the multi-channel physiological measurement, raw data was transformed into z-scores and averaged for targets and non-targets for each subject.

Correlations were assessed between the numbers of subjects' correct choices, scores on personality scales and physiological response differences between targets and non-targets.

⁶ This study is a supplement to a project funded by the Bial Foundation, Portugal.

For analyzing correct choices a binomial test for proportions was used. For the physiological measures effect sizes (Cohen's d) were computed; p -values were assessed by paired t -tests.

Preliminary Results: The number of targets correctly identified across all subjects was at chance level (proportion = 0.263, $z = 0.738$, $p = .460$).

The replication analysis revealed no significant difference in HR between targets and non-targets when the whole interval of stimulus presentation was evaluated ($d = 0.003$, $t(6719) = 0.455$, $p = .649$). An exploratory inspection of the HR offered two separable time windows. The first 5 seconds after stimulus onset revealed a significantly stronger increase in HR for targets than for non-targets ($d = 0.017$, $t(3359) = 2.187$, $p = .029$). In the following 5 seconds HR decreased without a significant difference between targets and non-targets ($d = -0.011$, $t = -1.409$, $p = .159$).

The analysis of the multi-channel physiological measurement showed no response differences between targets and non-targets for EDA ($d = 0.196$, $t(36) = 0.655$, $p = .510$), RLL1 ($d = 0.288$, $t(47) = 1.116$, $p = .270$), RLL2 ($d = 0.321$, $t(47) = 1.241$, $p = .221$), pHR ($d = 0.289$, $t(47) = 1.119$, $p = .269$) and FPWL ($d = -0.026$, $t(39) = -0.093$, $p = .926$). An explorative investigation of the first 5 seconds after stimulus onset revealed a significantly higher pHR (raw data was used because of a higher effect size) for targets than for non-targets ($d = 0.541$, $t(47) = 2.371$, $p = .022$). The difference in the following 5 seconds was not significant ($d = 0.096$, $t(47) = 0.583$, $p = .563$).

No significant correlations between scores on personality scales, number of correct choices and physiological response differences between targets and non-targets occurred.

Discussion: The aim of this study was to investigate anomalous physiological stimulus discrimination as found in the studies of Sartori et al. (2004) and Tressoldi et al. (2005). This was intended by the attempt to replicate the effect, to use additional physiological measurement and to examine correlations of physiological responses with scores on personality traits.

For the same time interval (10 seconds) and with the same method of data analysis as in the mentioned studies, no significant difference was found for HR between targets and non-targets. Effect sizes turned out to be small and fell behind the effect sizes of Sartori et al. (2004) and Tressoldi et al. (2005).

However, further and explorative investigation of HR revealed a significantly stronger increase within the first 5 seconds of stimulus presentation for targets than for non-targets. It is of interest whether this increase is similar to the effect found in earlier studies (Sartori et al., 2004; Tressoldi et al., 2005). For a clarification, time courses of HR might be compared between studies. Future studies should investigate the characteristics of HR for targets and non-targets during the stimulus presentation in this forced-choice guessing task.

The results of the multi-channel analysis did not reveal significant differences between targets and non-targets. However, an explorative analysis of pHR supported the above-mentioned finding of a possible effect during the first 5 seconds after stimulus presentation. Phasic HR increased significantly more for targets than for non-targets. Further studies should focus on this time period.

Subjects' scores on paranormal belief, level of absorption and openness to experience did not correlate significantly with physiological response differences between targets and non-targets.

As above-mentioned, targets were chosen randomly by the computer. Hence, target positions were not balanced across subjects. In case of an unequal distribution of the target positions a habituation of the physiological reactions within blocks could have influenced the results. A control for this distribution would be important for a concluding interpretation of the data. An attempt to control statistically for target positions is in preparation and will be discussed.

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ABSTRACTS

Invited Addresses

WHY I AM ABSOLUTELY CONVINCED OF THE REALITY OF PSYCHIC ABILITIES, AND WHY YOU SHOULD BE, TOO

Russell Targ

Outstanding Career Award, 2009

In May of 1956, I left my graduate studies in physics at Columbia University and prepared to begin work in plasma physics at the research laboratories of Sperry Gyroscope Co., in Great Neck, NY. After a decade of reading the research literature of ESP and experiencing psi on the stage as a performing magician, I gave myself the summer of my 22nd year to go to Europe to look for psychics and visit ESP research labs. One of my first stops was the Society of Psychical Research in Adam and Eve Mews in London. There, Mrs Goldney gave me a cup of tea and a copy of the *Proceedings of the CIBA Foundation Symposium on Extrasensory Perception* which had been held the previous year. I read it with great disappointment. The conclusions of the world's leading researchers, A. S. Parkes and J. F. Nicol, were that, if ESP was ever shown to exist, it would be very important for mankind. ESP was thought to be either a "weak and unrepeatable artifact of a very few subjects, or a defect in our understanding of probability theory". Those words were repeated, almost exactly, by a distinguished US researcher in 1982, at the 100th anniversary celebration of the SPR at Cambridge. Have we made any progress in the 55 years since the CIBA conference?

During my 40 years of association with the PA, I've seen many hopeful speakers ask the attendees for a show of hands with regard to how many members of the audience were absolutely convinced of the reality of ESP. Neither the past President Ed May nor I have seen even a 50% affirmative response. How can we make progress in understanding psi, if we are not even sure that it exists? Philosopher Stephen Braude, also a past President of the PA, discusses the issue of belief in his seminal book on survival of consciousness, *Immortal Remains*. He argues that superpsi is not a parsimonious description of the survival data.

He could just as well be arguing for the existence of psi. Braude says in effect, that in order to try and explain away the century of data for psi (or survival) as a combination of "error and fraud" we would have to deal with "a crippling burden of complexity", with which one could argue against the existence of anything. Prof. Jessica Utts makes this point in her 1995 analysis of the ESP database, in the *American Institute of Research Evaluation of Remote Viewing* for the CIA. She says that the reality of psi has been established as well as any other statistical phenomena. As a physicist, I can agree that we don't understand the mechanism of psi. Among other things, the data for precognition convincingly show that we don't even understand the nature of causality. This is the most seriously misunderstood aspect of psi.

The following data which track my career at SRI have convinced me, without a doubt, that our awareness is nonlocal, our consciousness is limitless, psi is real, and its accuracy and reliability are independent of distance and time. I believe that who we are is a reflection of our extraordinary nonlocal (and probably eternal) consciousness. That is why I continue to teach remote viewing internationally. I cannot wait to see what the future holds!

In 1974, we at SRI worked with retired Burbank, CA, police commissioner Pat Price, and carried out nine double-blind remote viewing trials in which Price was asked to describe Hal Puthoff's randomly chosen locations. From a pool of 60 possible locations, Price had seven first place matches ($p = 3 \times 10^{-5}$, effect size = 1.3).

In 1975, we were asked by the CIA to find an inexperienced "control" subject. I chose my good friend, photographer Hella Hammid. In nine double-blind trials of outdoor locations she obtained five first place

matches, and four second place matches ($p = 2 \times 10^{-6}$, effect size = 1.5). These two experiments were published in the March, 1976, *Proceedings of the IEEE*.

In 1972, Dr Hal Puthoff and I co-founded the SRI remote viewing program. We began the applied SCANATE Program with painter Ingo Swann and Pat Price, successfully looking into and describing a NSA secret cryptographic site in Virginia. Pat named the site and read code words from the files, confirmed by both NSA and CIA. Reading anything is an exceptional feat in our remote viewing experiments.

1973: Price described, and drew to scale, a Soviet Siberian weapons factory at Semipalitinsk, with an enormous eight-wheeled gantry crane and a concealed 60-foot steel sphere under construction. This was all confirmed two years later by satellite photography.

1974: Price identified and named the kidnapper of Patricia Hearst from the large loose-leaf mug book with hundreds of photos, at the Berkeley California police department, two days after the kidnapping. He then located and led police to the kidnap car fifty miles to the north.

1974: Ingo Swann described a failed Chinese atom bomb test for the CIA, from geographic coordinates. He drew it with colored pencils showing a line of trucks and a pyrotechnic display of the failed test, precognized three days in advance of the actual test.

1974: We received a NASA contract called "Techniques to Enhance Man/Machine Communication". This was based on a four-choice ESP teaching machine that I had developed, and which offered feedback, reinforcement, and the option of a 'pass'. Users learned to recognize a "unique psychic feeling". Working with 150 subjects, we found that eleven of the people demonstrated significant learning, several at the $p < 0.01$ level. I have now made this four-choice game available as a free application for the iPhone. It is called *ESP Trainer*.

In 1978, Hal Puthoff and I were asked by the Army to choose six Army Intelligence officers from a group of thirty, who were to learn remote viewing and set up a program similar to ours, at Fort Meade, MD. Working with these six officers, we carried out 36 trials. We obtained 18 first place matches, in which four people were each significant at $p = 0.003$. The probability for the whole experiment is $p = 3 \times 10^{-5}$, effect size = 0.67.

In 1982 I organized a precognition experiment with psychologist Keith Harary, to forecast silver commodity futures. We carried out nine trials to determine the change in the silver market five days in the future. We forecasted up or down, and $>$ or $<$ \$0.25 ($p = 1/4$). We achieved nine out of nine first place matches ($p = 4 \times 10^{-6}$, effect size = 1.4) and we earned \$120,000. The following year we were not successful, possibly because we tried to accelerate the trial rate, with the viewer not receiving timely feedback from the previous trial.

In 1996, working with Jane Katra, two mathematicians, and a redundancy coding protocol, we obtained eleven hits out of twelve trials for silver futures, with six passes. We each had different target pools, and agreement on direction (up or down) was necessary for the trial to go forward.

In 1978 Joe McMoneagle located a downed Soviet Backfire Bomber with code books on board. He psychically pinpointed the African site. President Carter confirmed the success.

1980: Keith Harary described the poor health of US Vice Council Richard Queen when Queen was held hostage in Iran. He told of Queen's imminent release in a double blind trial.

1980: Joe McMoneagle described and detailed the unique, secret construction of a surprising 500-foot Soviet Typhoon class submarine being built in a concrete-block building $1/4$ mile from the sea, six months before its launch. About $2/3$ of our SRI trials looked like this.

These remote viewing successes continued for the 23 Year Program at SRI, 1972-1995, with \$25 million funding from the CIA, DIA, NASA, Navy, Air Force and Army Intelligence. The scientific findings from this program were published in *Nature*, *Proc. IEEE*, *American Institute of Physics* and the *AAAS*, with replications conducted at Princeton, Edinburgh and Utrecht Universities.

Abstracts of Presented Papers

I believe this summary shows the importance of working with gifted people, and also that highly improbable “applications”, such as Pat Price decisively putting his finger on the photo of Patricia Hearst’s kidnapper, should not be academically dismissed as anecdotes.

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